
JOINT USERS RESOURCE ALLOCATION PLANNING (JURAP) MEETING
NOVEMBER 21, 2002

Jet Propulsion Laboratory
California Institute of Technology

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December 10, 2002
Refer to: 930-02-016-ESB:lc

TO: Distribution

FROM: Eugene S. Burke

SUBJECT: Minutes for the Joint Users Resource Allocation Planning Committee Meeting held November 21, 2002.

NEXT JURAP MEETING:
Thursday, January 16, 2003
JPL Bldg. 303, Room 411 – 1:00 p.m.
There will be no meeting held in December

Attendees:

Andujo, A.	Hall, J.	Morris, D.	Valencia, J.
Baldwin, J.	Holmes, D.	Poon, P.	
Brymer, B.	Lacey, N.	Ryan, R.	
Compton, B.	Martinez, G.	Ryne, M.	
Doody, D.	Martinez, K.	Slade, M.	

The Joint Users Resource Allocation Planning Committee meets monthly to review the status of Flight Projects, the requirements of other resource users, and to identify future requirements and outstanding conflicts. The last regular meeting was held on November 21, 2002 at the Jet Propulsion Laboratory.

Introductory Remarks / Conflict Resolutions – D. Morris
D. Morris presided over the meeting and welcomed the attending Mission representatives. There were several scheduling conflicts that have been tentatively resolved. The TDRS launch has been scheduled for December 5. The SRTF launch date is January 29.

Goldstone reported a problem while testing at DSS-24 with its new transmitters. The fault is traced to FTS Distribution and Goldstone has requested a 5-hour complex-wide downtime. This is planned for DOY 330/0000-0500.

RARB Action Items – D. Morris
Action Item 4 is now closed. SGP CSR to give representation and authority regarding RARB recommendations.
Action Item 8 is now closed. DSS-63 ACR has been planned for 09/19/05 – 11/06/05.
Action Item 9 is now closed. DSS-43 ACR has been planned for 07/25/05 – 09/11/05.

All other Action Items remain open although work seems to be proceeding as expected.

Resource Analysis Team – A. Andujo and N. Lacey
No changes have been made to the DSN Mission Set since last months JURAP.

No changes have been made to the DSN Resource Implementation Planning Matrix since last months JURAP.

The RAPSO team has completed the following studies:
- Selene Load Study

The following studies are ongoing:
- Lunar-A Load Study redo due to changed launch date
- Messenger Load Study
- ST5 Load Study

A review and status of the RARB timeline was discussed. To see a more detailed RARB timeline please visit the RAP Homepage and click RARB Timeline.

DSS Downtime Forecast – J. Valencia
The 2003, 2004, 2005 and 2006 downtime forecasts have been updated and posted to the RAP website. Many changes have been made to the downtime schedules as a result of contentions and weekly downtime meetings. Please see the attached Downtime report for details.

DSN Operations – J. Buckley
There was no presentation given at this month's JURAP.

Goldstone Solar System Radar – M. Slade
It was reported that GSSR activities were nominal for the month of September. There are 11 observations of Near-Earth Asteroid 1997 XF11 planned. These observations will hopefully confirm Spacewatch's data on the asteroids trajectory, which so far indicates that it will miss the Earth by 600,000 miles in 2028. There is also 2 days of observations planned for 2002SY50 to determine if it is the lost Near-Earth Asteroid Hermes, which is believed may come back close to Earth at any time.

Radio Astronomy / Special Activities – G. Martinez
It was reported that all Clock Synchronization activities during the last month were successful, however DSS-45 and DSS-65 Cat M&E activities suffered hardware and link failures resulting in a 2% data loss overall. There was also success with the Europe 65 SGP activity, although the IVS-CRF-15 SGP activity suffered a 10% data time loss due to several failures at DSS-45.

JURAP Science Advisor – E. Smith
There was no presentation given at this month's JURAP.

FLIGHT PROJECTS REPORTS

Cassini – D. Doody
It was reported that the spacecraft is in good health and all operations are nominal. Initial indications show that the probe is also healthy after Probe Checkout number ten, although all the data has not yet been analyzed.

ISTP, WIND, POLAR, SOHO, GEOTAIL, Cluster II – A. Chang
There was no presentation given at this month's JURAP.

NOZOMI – M. Ryne / A. Chang
At this time the Nozomi spacecraft is in good health, but the spacecraft is at a critical phase in which there must be no failures in the navigation of the spacecraft during it's next two Earth swing-bys, otherwise it will never reach Mars due to it' low fuel status. If there are navigational problems the spacecraft will simply perform a Mars flyby.

MAP, ACE, and IMAGE, Genesis – S. Waldherr
There was no presentation given at this month's JURAP.

Mars Global Surveyor – E. Brower
There was no presentation given at this month's JURAP, though presentation material is included with the Minutes.

Mars Odyssey – B. Mase / P. Poon
The M01O spacecraft went into Safe Mode due to a sequence abort, caused by an unusual sequence of instructions. The spacecraft recovered and has returned to normal operations including data collection. Although the Safing incident used fuel it is estimated that there remains enough fuel to operate the spacecraft for another 10 years.

INTEGRAL – D. Holmes
On October 17 the INTEGRAL spacecraft was successfully launched from the Baikonur Cosmodrome in Kazakstan. Since then, launch and early orbit operations have proceeded without incident. An overview of the spacecraft and its mission were presented.

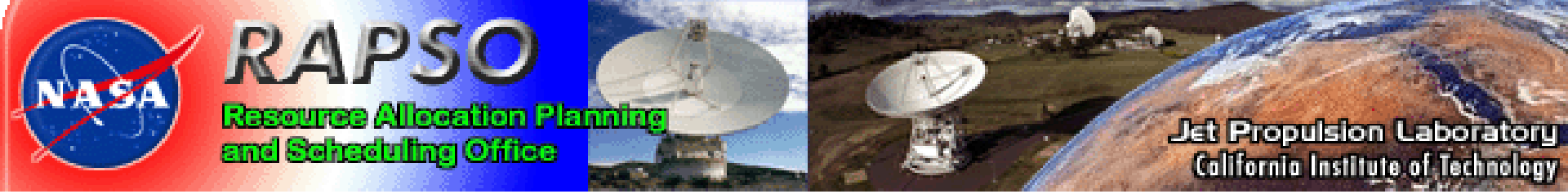
Ulysses – B. Brymer
It was reported that all operations and supports with the Ulysses spacecraft are nominal.

Galileo – B. Compton
Galileo spacecraft has suffered several problems due to exposure to high levels of radiation during the Amalthea Close Approach. At this time all systems but the tape recorder have been restored on the spacecraft, it is believed that the tape drive will be recovered.

Stardust / Pioneer 10 - R. Ryan
There are no problems with the Stardust spacecraft at this time. The spacecraft has successfully completed a flyby of the Anne Franke asteroid; all instruments functioned as expected including the dust collection instrument.

Chandra – K. Gage
There was no presentation given at this month's JURAP.

Voyager – J. Hall
It was reported that both Voyager spacecraft are healthy and all operations are nominal. Voyager support by the DSN has been good.

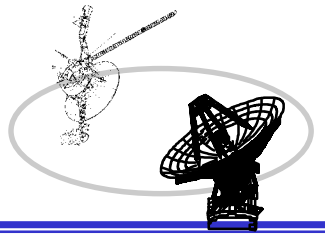


Joint Users Resource Allocation Planning (JURAP) Meeting

November 21, 2002

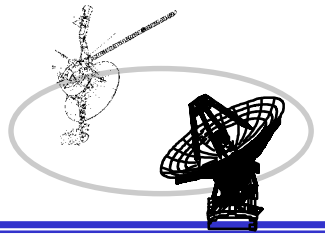
Action Item Status
From August 13, 2002 RARB
(Resource Allocation Review Board)

David G. Morris



Action Item Status

- Three Action Item Closures to Report.
  - Action Items 4, 8 and 9 are now closed.
- Three Action Items are Pending
  - Action Items 3, 5 and 6 should close soon.



Action Item Summary

AI#	*Year*	*Month(s)*	*System*	*Responsible*	*Due Date*	*Status*
01	**2003**	**Jan-Dec**	**DSMS P & C**	**R. Miller**	**9/19/2002**	**Closed**

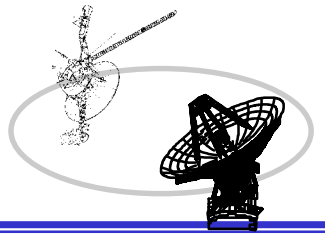
ACTION: Investigate and Negotiate the feasibility of alternate assets providing current DSN Catalog Maintenance and Enhancement (CAT M&E) radio sources.

RESPONSE: (9/19/02) The Reference Frame and Calibration Project reevaluated requirements which reduced scheduling constraints for acquiring sources. Therefore forecasted allocations should prove adequate with only some missed periods in 2003.

AI#	*Year*	*Month(s)*	*System*	*Responsible*	*Due Date*	*Status*
02			**DSMS Engineering**	**J. Statman**	**9/19/2002**	**Closed**

ACTION: Provide date when 810-5 will be updated with revised G/T values based upon new X/X/Ka feeds on the 34m BWG. (Reference page 28 of DSMS Engineering presentation.)

RESPONSE: (10/18/02) Module 104 will be published by 7/1/2002; measurements will be taken in February 2003.



Action Item Summary

AI#	*Year*	*Month(s)*	*System*	*Responsible*	*Due Date*	*Status*
03	**2003**	**July-August**	**GSSR & Mars Program Office**	**A. Haldeman C. Edwards**	**12/12/2002**	**Pending**

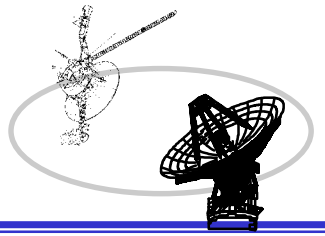
ACTION: Investigate and negotiate the conflicting requirements for GSSR-Mars Landing Survey vs. ongoing Mars Program spacecraft support.

RESPONSE: (11/14/02) The GSSR-Mars Landing Survey reevaluated requirements which reduced scheduling constraints and those are proceeding through RAPT. The first two allocation requests have been inserted into weeks 28 and 29 without any conflicts. Requests for weeks 31-38 are pending insertion.

AI#	*Year*	*Month(s)*	*System*	*Responsible*	*Due Date*	*Status*
04	**2003**	**October**	**SGP**	**P. Wolken**	**9/19/2002**	**Closed**

ACTION: Consult with the Project for a decision regarding all SGP recommendations made by RAPSO and provide RARB Representative authority to negotiate recommendations that reduce SGP support.

RESPONSE: (11/14/02) Closed with SGP CSR.



Action Item Summary

AI#	*Year*	*Month(s)*	*System*	*Responsible*	*Due Date*	*Status*
05	**2003**	**December**	**NASA HQ Code S**	**B. Geldzahler**	**10/17/2002**	**Pending**

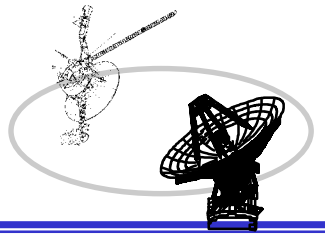
ACTION: Coordinate NASA Code Y to NOAA support for GOES N to be outside the 2003 – 2004 High Activity period. R. Skidmore states that the GOES-N Project is aware of the contentions and GSFC representatives will work with the Project for a decision to resolve the issues.

RESPONSE: (9/17/2002) Code S is working with the Code Y to resolve this issue.

AI#	*Year*	*Month(s)*	*System*	*Responsible*	*Due Date*	*Status*
06	**2003-2004**	**December-April**	**DSMS Plans & Commit Office and Mars Program**	**R. Miller** **C. Edwards**	**10/11/2002**	**Pending**

ACTION: Develop planning envelope for Mars Program to plan their critical support within. This is to preserve and assure other missions' committed support throughout this period as well as needed DSS Maintenance as presently defined.

RESPONSE: (9/27/2002) RAPSO has presented a summary of the proposed planning envelope to Mars Program and DSMS Plans and Commitments Office.



Action Item Summary

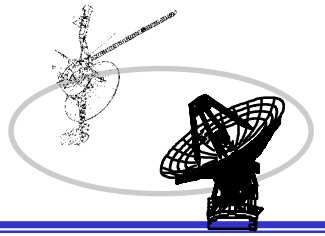
AI#	*Year*	*Month(s)*	*System*	*Responsible*	*Due Date*	*Status*
07	**2003-2004**	**December-April**	**Mars Program**	**B. Arroyo**	**06/01/2003**	**Open**

ACTION: Multi-mission DSN Allocation and Planning (MDAP) provide a Mars Program coordinated input to Resource Allocation (Mid-Range) Planning Team (RAPT) of at least one week per week at least 6 months prior to the schedule week. This action will use the result of Action Item 6 to clarify the scope of resources in which to plan to.

AI#	*Year*	*Month(s)*	*System*	*Responsible*	*Due Date*	*Status*
08	**2005**	**April-June**	**RAPSO**	**N. Lacey**	**10/17/2002**	**Closed**

ACTION: Coordinate new plan for DSS-63 Antenna Controller Replacement Task with DSMS Engineering based upon newly defined requirements provided by Cassini.

RESPONSE: (11/19/2002) The DSS-63 Antenna Controller Replacement with the concurrence of DSMS Engineering is now planned for 09/19/05 - 11/06/05, Weeks 38 - 44, DOY 262 - 310.



Action Item Summary

AI#	*Year*	*Month(s)*	*System*	*Responsible*	*Due Date*	*Status*
09	**2005**	**July**	**RAPSO**	**N. Lacey**	**10/17/2002**	**Closed**

ACTION: Coordinate new plan for DSS-43 Antenna Controller Replacement Task with DSMS Engineering based upon newly defined requirements provided by Cassini.

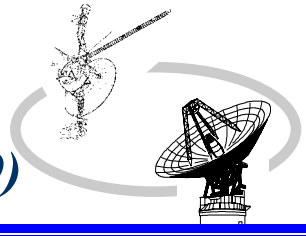
RESPONSE: (11/19/2002) The DSS-43 Antenna Controller Replacement with the concurrence of DSMS Engineering is now planned for 07/25/05 - 09/11/05, Weeks 30 - 36, DOY 206 - 254.

JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

Resource Analysis Team

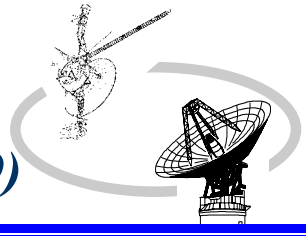
November 21, 2002

Art Andujo

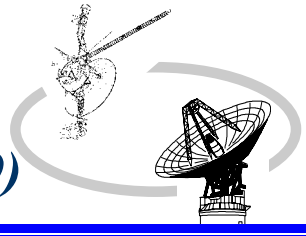


◆ RESOURCE NEGOTIATION STATUS

- 2003 WEEKS 01 – 04 (THRU 01/26/2003) WAS RELEASED TO DSN ON 11/12/2002
- 2003 WEEKS 5 – 8 (THRU 02/23/2003) IS DUE TO BE RELEASED ON 12/06/2002
- 2003 WEEKS 23 – 26 (THRU 06/29/2003) WILL GO INTO NEGOTIATIONS STARTING 12/13/2002

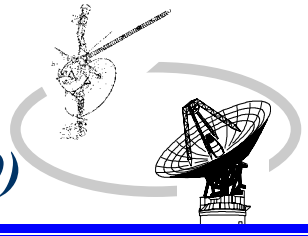


- **SPECIAL STUDIES/ACTIVITIES**
  - SELENE LOAD STUDY COMPLETE
- **ON-GOING ACTIVITIES**
  - MADB/TIGRAS TESTING AND TRAINING
  - DOWNTIME PLANNING
  - LUNAR-A LOAD STUDY REDO DUE TO CHANGED LAUNCH
  - MESSENGER LOAD STUDY
  - ST5 LOAD STUDY



- **RARB – FEBRUARY 11, 2003**
  1. TIMELINE POSTED FOR FEBRUARY 11, 2003 is Available on RAPWeb
  2. PROJECT/USER'S RESPONSES WERE DUE NOVEMBER 15, 2002
  3. 5 PROJECTS/USERS HAVE NOT SUBMITTED A ULP OR MAJOR EVENTS LISTING AS OF TODAY

HTTP://RAPWEB.JPL.NASA.GOV



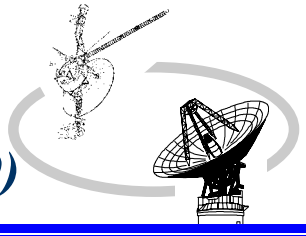
Resource Allocation Review

2004 – 2012

February 11, 2003

TIMELINE

Calendar Date	Work Days Remaining	Milestones
10/22/2002	73 Days	Distribute Mission Set, Major Events and User Loading Profiles to Projects/Users for verification.
11/15/2002	55 Days	Deadline for Projects/Users response to Mission Set, Major Events, and User Loading Profiles. Last Day For Trajectory or Viewperiod updates and submissions.
11/27/2002	47 Days	Start preliminary requirements analysis and recommendations.
1/14/2003	19 Days	NASA Headquarters Science Review.
1/22/2003	14 Days	Post preliminary Contentions/Recommendations on the RAPWEB for Projects/Users review.
1/31/2003	07 Days	Complete Projects/Users Review.
2/6/2003	03 Days	Post final Contentions and Recommendations on the RAPWEB.
2/10/2003	01 Days	Distribute booklets to RARB Board Members.
2/11/2003	0 Days	Resource Allocation Review Board Meeting .



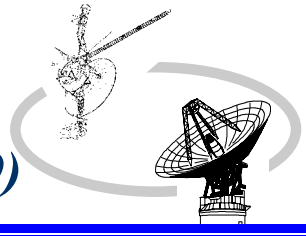
DSN Resource Implementation Planning Matrix

Station	Subnet	Delivery Date	S-Band Down	S-Band Up	X-Band Down	X-Band Up	20kW X-Band	Ka-Band Down	Ka-Band Up	NSP
DSS-14	70M	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	TBD	N/A	05/13/03
DSS-15	34HEF	XXXX	XXXX	N/A	XXXX	XXXX	XXXX	TBD	N/A	04/10/03
DSS-16	26M	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A
DSS-24	34B1	XXXX	XXXX	XXXX	XXXX	12/23/02	12/23/02	10/01/05	N/A	12/23/02
DSS-25	34B2	XXXX	N/A	N/A	XXXX	XXXX	09/15/03	XXXX	XXXX	03/10/03
DSS-26	34B2	04/02/03	N/A	N/A	04/02/03	04/02/03	04/02/03	04/02/03	N/A	04/02/03
DSS-27	34HSB	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A
DSS-34	34B1	XXXX	XXXX	XXXX	XXXX	XXXX	04/07/03	01/01/05	N/A	04/07/03
DSS-43	70M	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	TBD	N/A	02/10/03
DSS-45	34HEF	XXXX	XXXX	N/A	XXXX	XXXX	XXXX	TBD	N/A	05/03/03
DSS-46	26M	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A
DSS-54	34B1	XXXX	XXXX	XXXX	XXXX	XXXX	09/08/03	08/01/06	N/A	05/13/03
DSS-55	34B2	11/01/03	N/A	N/A	11/01/03	11/01/03	11/01/03	11/01/03	N/A	11/01/03
DSS-63	70M	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	TBD	N/A	04/21/03
DSS-65	34HEF	XXXX	XXXX	N/A	XXXX	XXXX	XXXX	TBD	N/A	02/10/03
DSS-66	26M	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A

XXXX = Capability Currently Exists

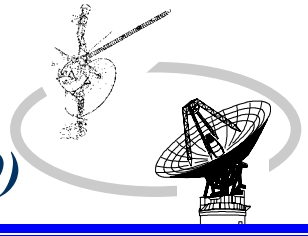
N/A = Capability Not Planned

09/19/02



DSN User / Mission Planning Set
2002 - 2012

ONGOING/PLANNED PROJECTS				
Project	**Acronym**	**Launch or Start**	**EOPM**	**EOEM**
DSN Antenna Calibration	DSN	--	--	--
DSS Maintenance	DSS	--	--	--
European VLBI Network	EVN	--	--	--
Ground Based Radio Astronomy	GBRA	--	--	--
Reference Frame Calibration	DSN	--	--	--
Space Geodesy	SGP	--	--	--
Pioneer 10 ACS	PN10	03/03/72	07/01/97	10/01/04
Voyager 2	VGR2	08/20/77	10/15/89	09/30/07
Voyager 1	VGR1	09/05/77	12/31/80	09/30/07
Goldstone Solar System Radar	GSSR	04/01/85	--	--
Galileo	GLLO	10/18/89	12/07/97	09/21/03
Ulysses	ULYS	10/06/90	09/11/95	09/30/04
ISTP - Geotail	GTL	07/24/92	07/24/95	09/30/07
ISTP - Wind	WIND	11/01/94	11/01/97	09/30/07
ISTP - SOHO	SOHO	12/02/95	05/02/98	09/30/07
ISTP - Polar	POLR	02/22/96	08/23/97	09/30/07
Gravity Probe B	GPB	06/01/96	01/01/05	TBD
Mars Global Surveyor	MGS	11/07/96	02/01/01	06/01/04
Advance Composition Explorer	ACE	08/25/97	02/01/01	09/30/07
Cassini	CAS	10/15/97	06/30/08	06/30/10
Nozomi (Planet-B)	NOZO	07/03/98	12/31/05	TBD
Stardust	SDU	02/07/99	01/14/06	- - -
Chandra X-ray Observatory	CHDR	07/23/99	07/24/09	07/24/14



DSN User / Mission Planning Set
2002 - 2012

ONGOING/PLANNED PROJECTS				
Project	**Acronym**	**Launch or Start**	**EOPM**	**EOEM**
Imager for Magnetopause-to-Aurora Global Exploration	IMAG	03/25/00	05/30/02	09/30/07
Cluster 2 - S/C #2 (Samba)	CLU2	07/16/00	02/15/03	09/30/07
Cluster 2 - S/C #3 (Rumba)	CLU3	07/16/00	02/15/03	09/30/07
Cluster 2 - S/C #1 (Salsa)	CLU1	08/09/00	02/15/03	09/30/07
Cluster 2 - S/C #4 (Tango)	CLU4	08/09/00	02/15/03	09/30/07
2001 Mars Odyssey	M01O	04/07/01	08/01/04	09/19/07
Microwave Anisotropy Probe	MAP	06/30/01	10/01/03	10/01/06
Genesis	GNS	08/08/01	09/08/04	- - -
Mission Enhancement by Ground-based Astronomy	MEGA	02/01/02	12/31/03	- - -
International Gamma Ray Astrophysics Lab	INTG	10/17/02	12/18/04	12/18/07
Rosetta	ROSE	01/13/03	07/10/13	- - -
Space Infrared Telescope Facility	STF	01/29/03	04/19/08	- - -
MUSES - C	MUSC	05/05/03	06/05/07	- - -
Mars Express Orbiter	MEX	05/23/03	02/11/06	08/03/08
Mars Exploration Rover - A	MERA	05/30/03	04/06/04	05/11/04
Mars Exploration Rover - B	MERB	06/25/03	04/27/04	06/15/04
Deep Impact	DIF	01/02/04	08/05/05	- - -
Messenger	MSGR	03/10/04	04/06/10	- - -
Lunar - A	LUNA	04/01/04	07/18/04	- - -
Space Technology 5	ST5	07/15/04	10/15/04	TBD
Mars Reconnaissance Orbiter	MRO	08/08/05	12/31/10	12/31/15
Stereo Ahead	STA	11/15/05	02/18/08	- - -
Stereo Behind	STB	11/15/05	02/18/08	- - -

DSN User / Mission Planning Set
2002 - 2012

ADVANCED PLANNING PROJECTS				
Project	**Acronym**	**Launch or Start**	**EOPM**	**EOEM**
Selene	SELE	07/23/05	09/30/06	- - -
New Horizons	NHRZ	01/10/06	03/18/17	TBD
Dawn	DAWN	05/27/06	07/26/15	TBD
Kepler	KPLR	10/01/07	10/14/10	TBD
Mars Competed Scout 2007	M07S	09/04/07	08/19/08	08/19/10
Mars CNES Premier Orbiter 2007	M07O	09/11/07	08/11/08	08/12/10
Mars ASI/NASA Marconi Telecommunications Orbiter 2007	M07T	08/23/07	07/18/18	TBD
Mars ASI/NASA Science Orbiter 2009	M09O	10/04/09	08/29/12	TBD
Mars Science Laboratory 2009	M09L	10/25/09	03/04/12	TBD
Advanced Radio Interferometry between Space and Earth (ARISE)	ARSE	06/15/10	06/15/15	- - -
VLBI Space Observatory Programme (VSOP-2)	VSP2	06/15/10	06/15/15	- - -
Mars CNES MSR Lander 2011	M11L	10/30/11	09/10/14	TBD
Mars CNES MSR Orbiter 2013	M13O	11/28/13	08/21/16	TBD

DSN Antenna Downtime Status and Forecast

Jose Valencia

November 21, 2002

http://rapweb.jpl.nasa.gov/planning

Antenna Downtime Status And Forecast

- 2002
  - DSS-24 remains down for NSP/20kwatt X-band through week 51 (12/22/02)
    - The task focus is to provide 20Kwatt S-Band uplink capability, and implement as much of X-band as possible
    - PIT testing was performed with ACE on 11/19/02 with 30 NO-OP commands successfully radiated through the S-band uplink
    - Encoder Mechanical Mod installation completed
  - DSS-43 is down from week 43, 2002 through week 06 2003
    - Regrouting
    - Master Equatorial Recladding
    - Antenna Structure painting
    - Servo Hydraulic upgrade
    - NSP implementation

Antenna Downtime Status And Forecast

- 2003
  - Added DSS-27 antenna downtime proposal for CCG task in week 23 (3-days)
  - Added DSS-54 antenna downtime proposal for Azimuth Axle replacement weeks 30-33 NIB to DSS-54 X-band 20Kwatt
    - Task to complete work on the remaining 2 azimuth drive wheel axles

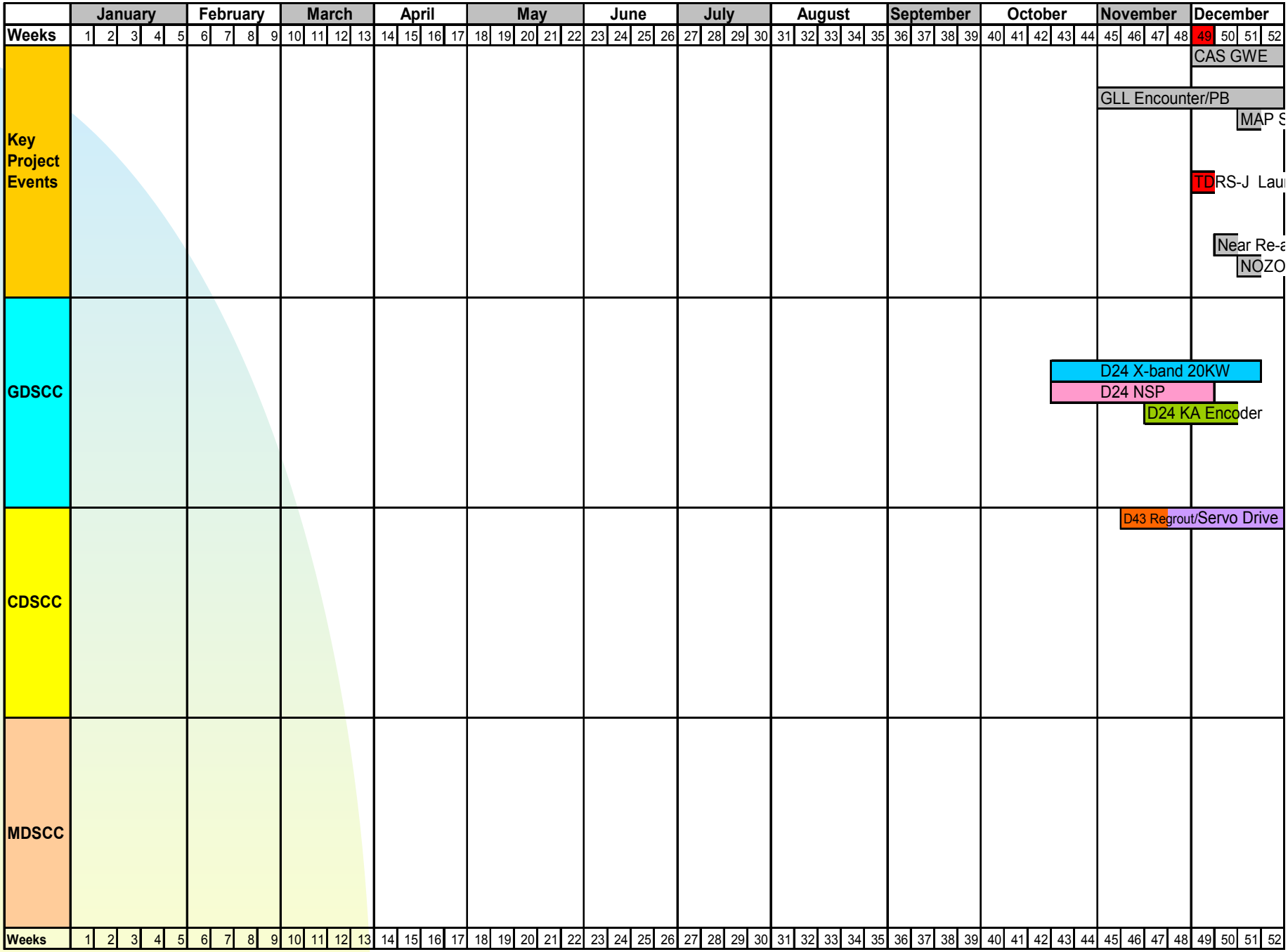
Antenna Downtime Status And Forecast

- 2004
  - Added DSS-14 antenna downtime proposal for Hydrostatic Bearing upgrade from week 39 through 47
    - First Hydrostatic Bearing Upgrade for the 70M sub net
    - No major antenna structure teardown is required
    - Task will replace all obsolete pumps and motors
    - Task will add several sensors and monitoring points
    - Downtime includes installation, system checkout, and 1 mission track for performance and functional verification
  - Added proposal for USC in weeks 39,40 NIB to DSS-14 Hydrostatic Bearing upgrade

Antenna Downtime Status And Forecast

- 2005
  - Moved DSS-24 antenna downtime proposal for USC task from 2006 to 2005 weeks 26,27
  - DSS-63 Antenna Controller task manager accepted the revised antenna downtime proposal in weeks 38-44, 2005 to facilitate closure of August 2002 RARB action Item #8
    - Cassini expressed concern with placement of DSS-63 proposed downtime
  - DSS-43 Antenna Controller task manager accepted the revised antenna downtime proposal in weeks 30-36, 2005 to facilitate closure of August 2002 RARB action Item #9
    - Cassini expressed concern with placement of DSS-43 proposed downtime
  - 2006
    - No changes

2002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Weeks
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Key Project Events
CAS GWE
GLL Encounter/PB
MAP S
TDRS-J Lau
Near Re-a
NOZO
GDSCC
D24 X-band 20KW
D24 NSP
D24 KA Encoder
CDSCC
D43 Regrout/Servo Drive
MDSCC
Weeks
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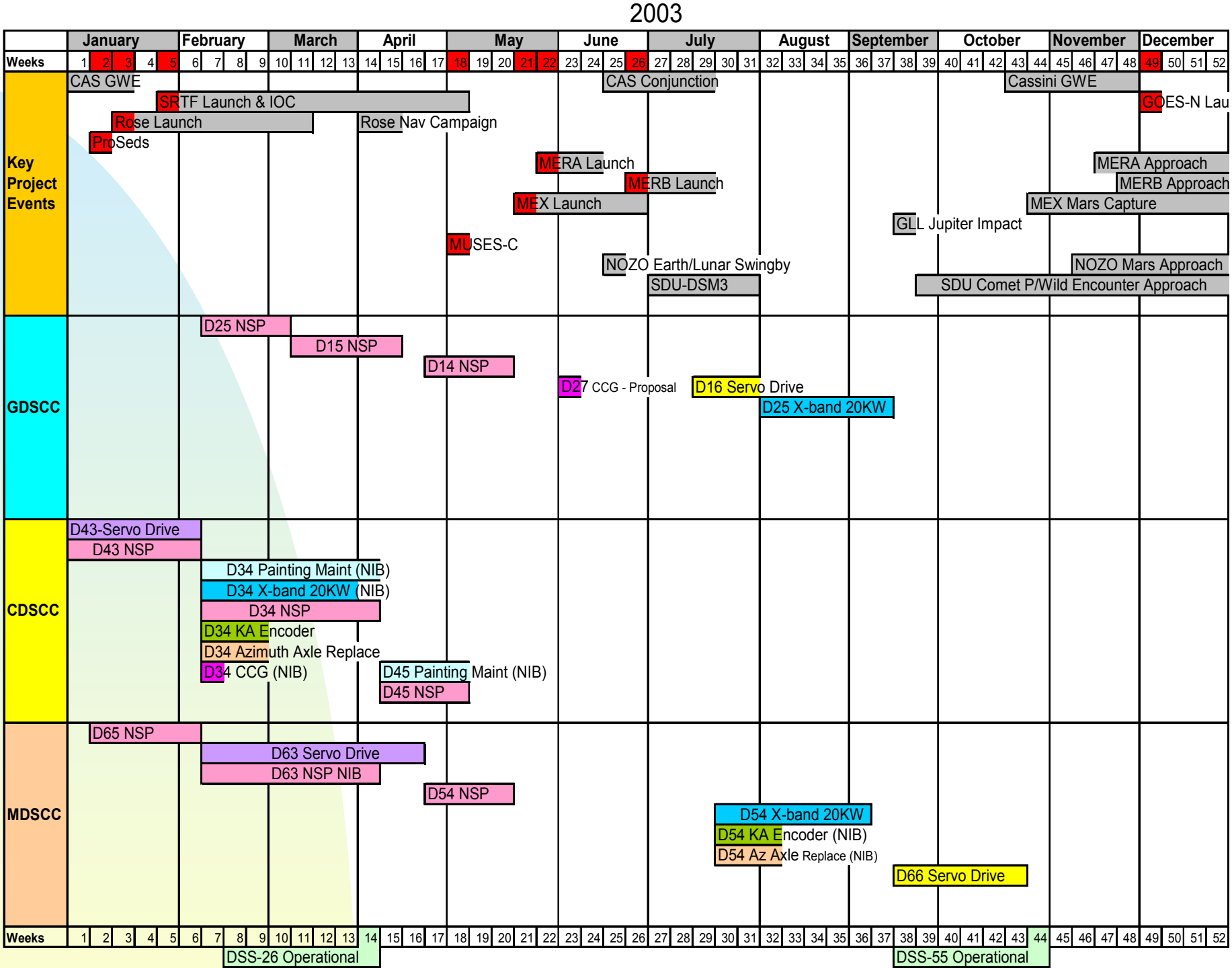
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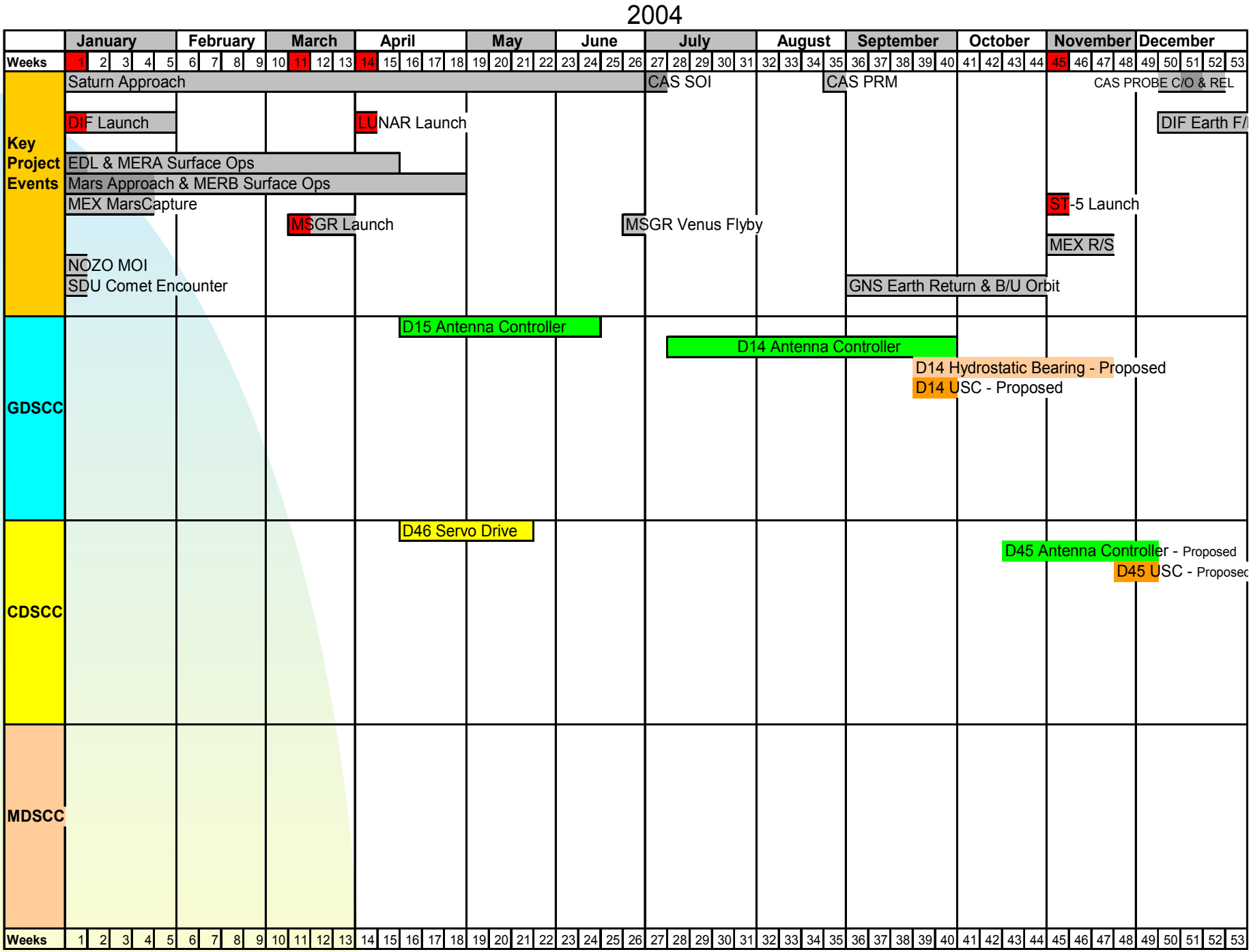
Key Project Events
CAS GWE
SRTF Launch & IOC
Rose Launch
ProSeds
Rose Nav Campaign
CAS Conjunction
Cassini GWE
GOES-N Lau
MERA Launch
MERB Launch
MEX Launch
MERA Approach
MERB Approach
MEX Mars Capture
GLL Jupiter Impact
MUSES-C
NOZO Earth/Lunar Swingby
NOZO Mars Approach
SDU-DSM3
SDU Comet P/Wild Encounter Approach
GDSCC
D25 NSP
D15 NSP
D14 NSP
D27 CCG - Proposal
D16 Servo Drive
D25 X-band 20KW
CDSCC
D43-Servo Drive
D43 NSP
D34 Painting Maint (NIB)
D34 X-band 20KW (NIB)
D34 NSP
D34 KA Encoder
D34 Azimuth Axle Replace
D34 CCG (NIB)
D45 Painting Maint (NIB)
D45 NSP
MDSCC
D65 NSP
D63 Servo Drive
D63 NSP NIB
D54 NSP
D54 X-band 20KW
D54 KA Encoder (NIB)
D54 Az Axle Replace (NIB)
D66 Servo Drive
DSS-26 Operational
DSS-55 Operational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Key Project Events
Saturn Approach
CAS SOI
CAS PRM
CAS PROBE C/O & REL
DIF Launch
LUNAR Launch
DIF Earth F/
EDL & MERA Surface Ops
Mars Approach & MERB Surface Ops
MEX MarsCapture
ST-5 Launch
MSGR Launch
MSGR Venus Flyby
MEX R/S
NOZO MOI
SDU Comet Encounter
GNS Earth Return & B/U Orbit
GDSCC
D15 Antenna Controller
D14 Antenna Controller
D14 Hydrostatic Bearing - Proposed
D14 USC - Proposed
CDSCC
D46 Servo Drive
D45 Antenna Controller - Proposed
D45 USC - Proposed
MDSCC
Weeks
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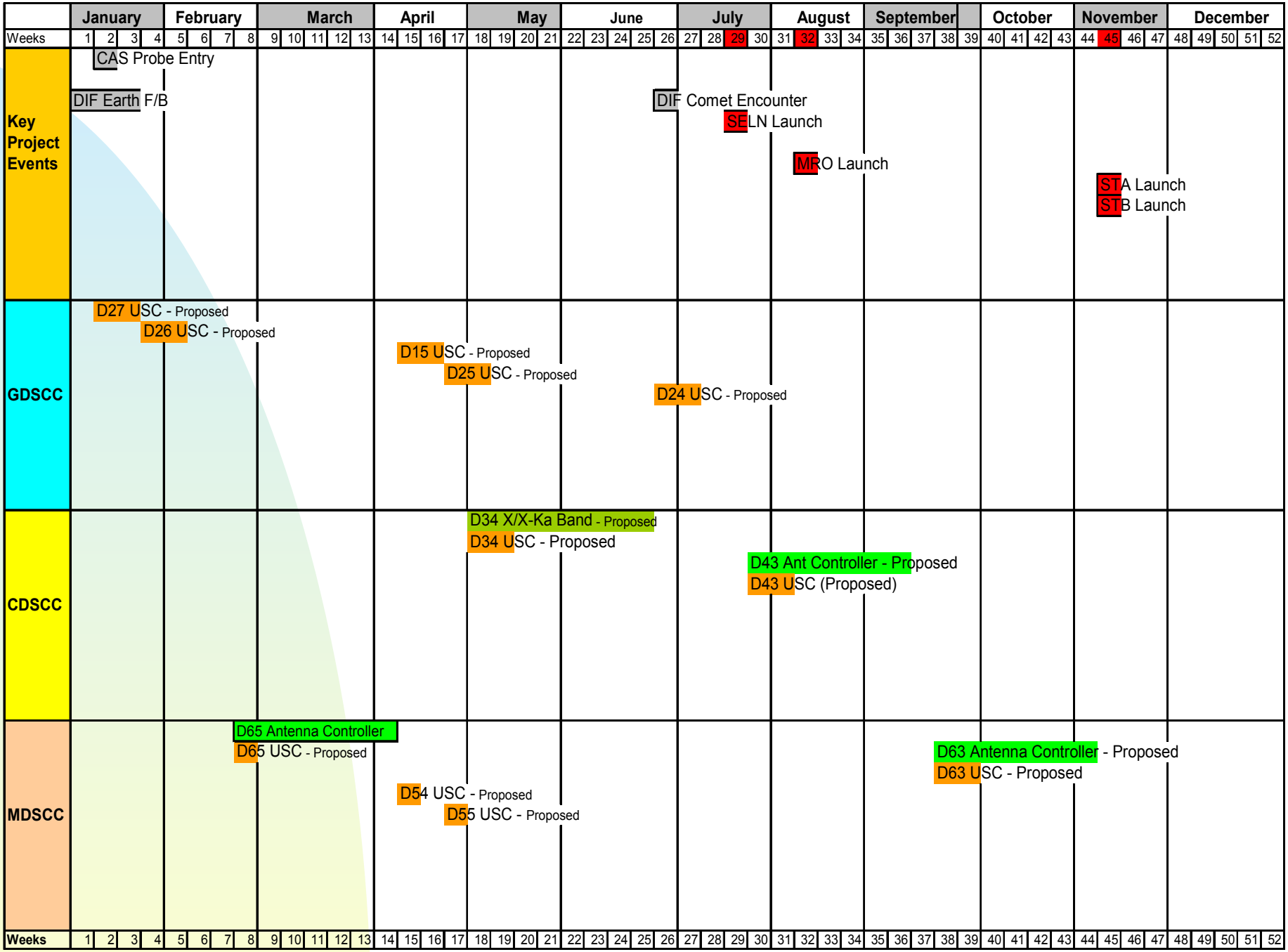
2005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Weeks
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Key Project Events
CAS Probe Entry
DIF Earth F/B
DIF Comet Encounter
SELN Launch
MRO Launch
STA Launch
STB Launch
GDSCC
D27 USC - Proposed
D26 USC - Proposed
D15 USC - Proposed
D25 USC - Proposed
D24 USC - Proposed
CDSCC
D34 X/X-Ka Band - Proposed
D34 USC - Proposed
D43 Ant Controller - Proposed
D43 USC (Proposed)
MDSCC
D65 Antenna Controller
D65 USC - Proposed
D54 USC - Proposed
D55 USC - Proposed
D63 Antenna Controller - Proposed
D63 USC - Proposed
Weeks
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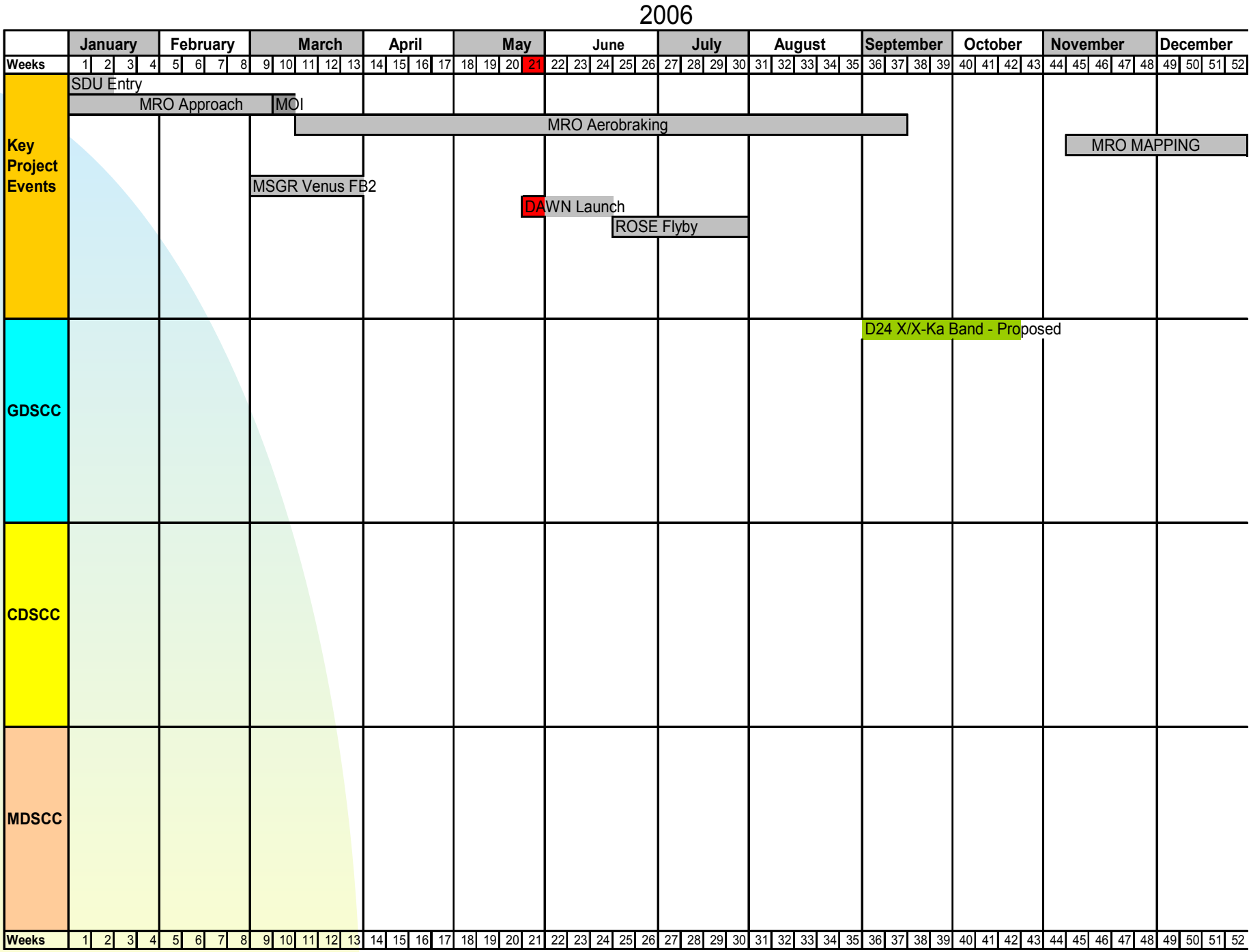
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Key Project Events
SDU Entry
MRO Approach
MOI
MRO Aerobraking
MRO MAPPING
MSGR Venus FB2
DAWN Launch
ROSE Flyby
GDSCC
D24 X/X-Ka Band - Proposed
CDSCC
MDSCC
Weeks
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52

Goldstone Solar System Radar

Martin A. Slade

Nov 21, 2002

NASA Jet Propulsion Laboratory

Joint Users Resource Allocation Planning Committee Meeting

Goldstone Solar System Radar (GSSR)

GSSR observed 3 near-Earth asteroids over the last month. Thanks to GBRA and VGR1 for additional time to observe PHA 2002 VE_{68}!

DOY	DATE	TXON	TXOFF	DSS	TARGET	PW	BD	DEC	SUPPORT
298	OCT-25-02	2040	0230	14	AST.1997XF11	520	X	-18	100%
299	OCT-26-02	2105	0340	14	AST.1997XF11	520	X	-19	65%
300	OCT-27-02	0125	0630	14	AST.2002SY50	520	X	-10	100%
300	OCT-27-02	2135	0310	14	AST.1997XF11	520	X	-19	100%
301	OCT-28-02	0110	0310	14	AST.2002SY50	520	X	-11	100%
301	OCT-28-02	0550	0830	14	AST.2002SY50	520	X	-11	100%
302	OCT-29-02	0050	0515	14	AST.2002SY50	520	X	-12	100%
302	OCT-29-02	2345	0240	14	AST.1997XF11	520	X	-18	70%
303	OCT-30-02	0030	0240	14	AST.2002SY50	520	X	-13	100%
303	OCT-30-02	2300	0445	14	AST.1997XF11	520	X	-18	85%
304	OCT-31-02	2320	0525	14	AST.1997XF11	520	X	-16	85%
304	OCT-31-02	2335	0525	14	AST.2002SY50	520	X	-15	100%
306	NOV-02-02	0130	0545	14	AST.2002SY50	520	X	-16	100%
306	NOV-02-02	0130	0600	14	AST.1997XF11	520	X	-15	100%
307	NOV-03-02	0015	0510	14	AST.2002SY50	520	X	-16	100%
307	NOV-03-02	0015	0645	14	AST.1997XF11	520	X	-13	100%
308	NOV-04-02	0015	0440	14	AST.2002SY50	520	X	-17	100%
308	NOV-04-02	0015	0645	14	AST.1997XF11	520	X	-12	97%
309	NOV-05-02	0130	0405	14	AST.2002SY50	520	X	-16	100%
309	NOV-05-02	0130	0635	14	AST.1997XF11	520	X	-10	98%
310	NOV-06-02	0030	0335	14	AST.2002SY50	520	X	-16	100%
310	NOV-06-02	0030	0645	14	AST.1997XF11	520	X	-08	100%
311	NOV-07-02	0130	0310	14	AST.2002SY50	520	X	-15	83%
311	NOV-07-02	0130	0730	14	AST.1997XF11	520	X	-07	100%
317	NOV-13-02	2350	0605	14	AST.2002VE68	520	X	+10	95%
318	NOV-14-02	2350	0610	14	AST.2002VE68	520	X	+06	100%

See:

http://reason.jpl.nasa.gov/asteroids/1997XF11/html/1997XF11_planning.html

http://www.gps.caltech.edu/~margot/NEAs/2002SY50/planning.html

http://echo.jpl.nasa.gov/asteroids/2002VE68/html/2002VE68_planning.html

Radio Astronomy

&

Special Activities

November 21, 2002

George Martinez

TEMPO
(Time and Earth Motion Precision Observations)

- Clock Sync
  - DOY 246
    - No problems were reported by either DSS-15 or DSS-65.
    - Data tapes were sent to the JPL correlator for processing.
  - DOY 303
    - DSS-15 reported the antenna stopped due to exceeding 0.8 deg/sec slew rate.
    - No problems were reported by DSS-65.
    - Data tapes were sent to the JPL correlator for processing.
- Metrics
  - 98% of data time utilized

Cat M&E

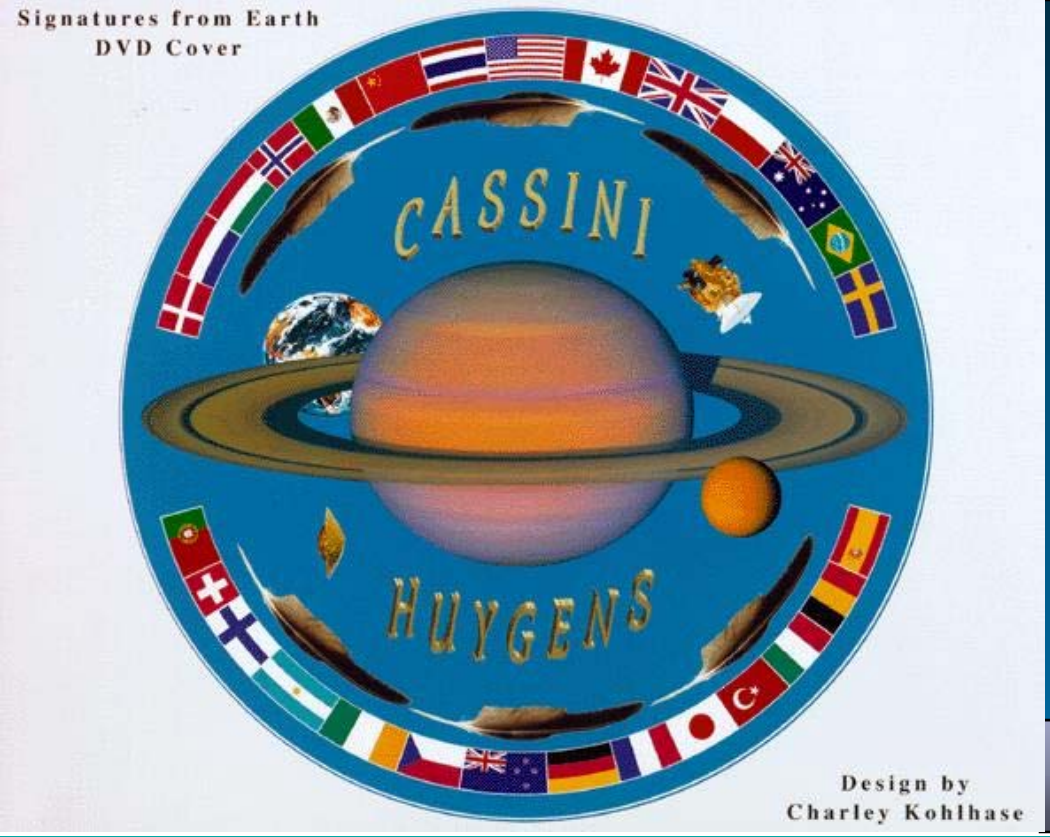
- DOY 285
  - DSS-15 and DSS-65 reported that the PI did not provide sufficient time for the tape change.
  - Data tapes were sent to the JPL correlator for processing.
- DOY 292
  - No problems were reported by either DSS-15 or DSS-65.
  - Data tapes were sent to the JPL correlator for processing.
- Metrics
  - 99.2% of data time utilized.

Ground Based Geodesy Program (SGP)

- **T2011**
  - **The objective of the IVS-T2 sessions is to monitor the Terrestial Reference Frame (TRF) via monthly sessions. All geodetic stations participate in at least three T2 sessions each year. These sessions replace the IRIS-S sessions observed in previous years.**
  - **DSS-65 lost communications with the APA/ACS.**
  - **Data tape sent to the Bonn correlator.**

- **Metrics**
  - **92.7% of the data time utilized.**

- Guest Observing
  - GM047
    - An L-band experiment to the expansion shell and image the true structure of supernova SN1979c.
    - DSS-63 detected strong RFI.
    - Data tape sent to the Bonn correlator.
  - GM048B
    - An L-band experiment to the study of the shell-like radio structure of supernova SN1993J. The expansion of the supernova is in accordance with models of shock excited emission, showing an almost circular symmetry for over 8 years. The only exception is a bright feature at the south-eastern region of the shell that has been observed at every epoch.
    - DSS-63 reported strong RFI.
    - No problems were reported by DSS-14
    - Data tapes sent to the Bonn correlator.



CASSINI

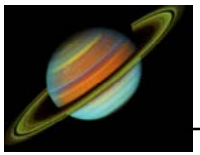
http://saturn.jpl.nasa.gov/cassini/index.shtml

Joint Users Resource Allocation Planning (JURAP) Committee Meeting

Dave Doody

November 21, 2002

NASA / Jet Propulsion Laboratory



Cassini

- In Space Science Subphase
  - Space Science observations ongoing, S/C frequently off Earth between DSN playback tracks
  - Tour advanced science planning continues
  - Routine Huygens S-band U/L testing scheduled for next week with MDSCC
  - NASA decision given for communications during SOI
    - Comm will be via LGA
    - This is the more favorable option for propellant conservation etc.
    - No TLM, in fact no closed-loop tracking. RSR provides the only visibility.
- Operations
  - Daily ops going well, excellent DSN support; excellent NOPE support
  - Minor S/C instrument adjustments, cals, and anomalies being worked near real time
  - SSR anomaly DOY 322 was caused by commanding. Fully recovered same day.
    - Did not enter safing. Normal command sequence continued executing.
    - Thanks for quick scheduling of additional CDSCC and MDSCC support in real time
  - DSS25 Ka-band TXR testing in progress, so far so good!
  - Participated in ESA DSS32 (New Norcia) testing by switching to k=7, r=1/2 convolutional coding.
  - AACS and CDS Flight Software testing, procedure testing, and CMD file preparation in progress
    - Uplink & in-flight checkout February through April
    - This is the Tour FSW
  - PITs conducted
  - Additional 2-way TRK passes being scheduled for Nav to verify data
- Feature Movie Presentation
  - View the 20 Dec. '01 Titan occultation of double star, observed with Palomar Hale Telescope:
    http://www.gps.caltech.edu/~antonin/titan.html

NOZOMI/PLANET-B

Presentation to:
Joint Users Resource Allocation Planning Committee

Mark Ryne

November 21, 2002

http://www.isas.ac.jp/e/enterp/missions/nozomi/cont.html

Overview

Nozomi/Planet-B

- Original Mission
  - Japanese Mars mission sponsored by ISAS
    - Upper atmosphere / solar wind interaction - similar to Pioneer Venus Orbiter
  - NASA involvement
    - On-board instrument and co-investigators
    - DSN navigation tracking and radio science
    - Navigation support for all phases of the mission
- Launched July 3, 1998
  - Phasing orbits
  - Lunar swingby on September 24, 1998
  - Weak stability orbit phase to save propellant
  - Lunar swingby on December 18, 1998
  - Powered Earth swingby on December 20, 1998
    - Insertion into Earth-Mars heliocentric transfer orbit
- Nominal arrival at Mars on October 11, 1999
  - Highly elliptical orbit with periapsis altitude of 150 km

Anomolies

Nozomi/Planet-B

- Tans Mars Insertion burn under thrust (December 20, 1998)
  - Oxidizer valve failed to open fully
    - Problem understood and corrected
  - New mission scenario implemented
    - Double Earth swingbys
    - Mars orbit insertion on January 1, 2004
      - Sufficient propellant to achieve mission objectives
- Failure of S-Band transponder (July 6, 1999)
  - Switched to S/X-Band
- Solar Flare (April 25, 2002)
  - Loss of attitude control
  - Propellant line heaters disabled
    - Propellant lines frozen

Current Status

Nozomi/Planet-B

- ISAS recovers control of spacecraft
  - Propellant lines thawed as Nozomi approaches perihelion
  - Course maneuver on September 3, 2002
- DSN tracking resumes on October 2, 2002
  - Approximately three tracking passes per week
- ΔDOR tracking campaign
  - Greatly enhances navigation accuracy with short data arcs
  - Employ range tones for pseudo ΔDOR capability
  - Approximately one ΔDOR per week
- Trajectory correction maneuver on November 22, 2002
  - Orbit solutions delivered to ISAS
  - Targets Earth-Earth cruise trajectory

Upcoming Events

Nozomi/Planet-B

- Final correction maneuver on December 16, 2002
- Earth swingby on December 20, 2002
  - Targets second Earth swingby
  - Possible post swingby trajectory correction maneuver
- Earth-Earth cruise
  - Poor link margin due to power and temperature constraints
    - No command or telemetry capability for most of cruise
- Earth swingby on June 19, 2003
  - Significant DSN tracking and ΔDOR support planned for three weeks leading into this event
  - Large ΔV penalty for navigation errors at this event
  - Critical pre/post swingby maneuvers planned

Open Issues

Nozomi/Planet-B

- ΔDOR DKF/SOE generation
  - DSN tracking support independent of Japanese sequence process
  - Extensive NOPE support for ΔDOR briefing messages
  - Navigation implementing "SIM" sequence team to generate SOE files to reduce NOPE workload
    - MEX, Rosetta and MUSES-C have expressed interest in our software for their ΔDOR support

- Spacecraft temperature at Mars
  - ISAS is working on a strategy to keep the propellant lines from freezing as Nozomi moves away from the Sun
  - Frozen propellant lines will preclude Mars orbit insertion

- Mars arrival date not yet firmly established
  - Possible impact on Mars armada tracking allocation
  - Better knowledge after Earth swingby in December 2002

Mars Global Surveyor
Flight Operations Status

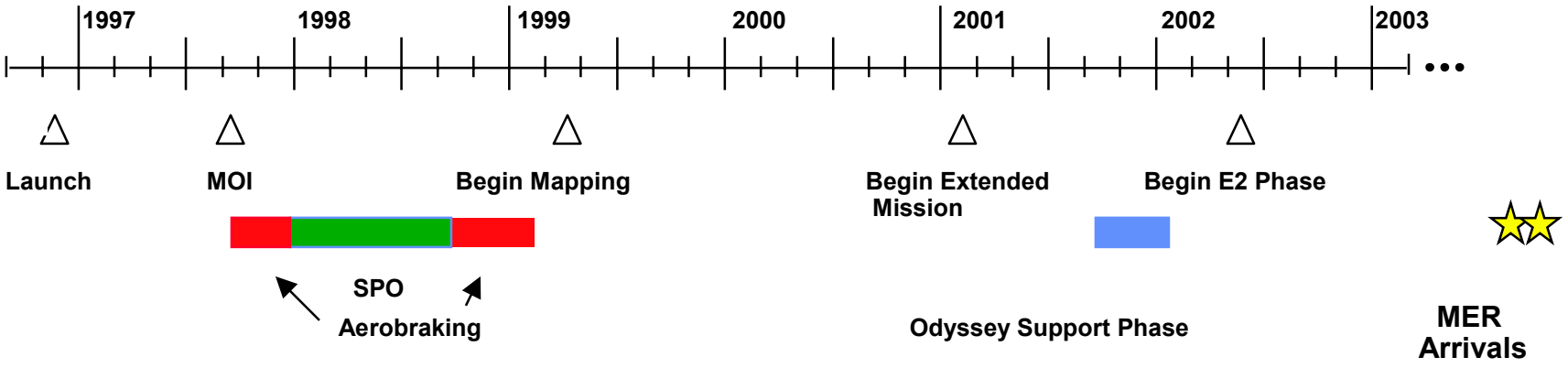
E.E. Brower

November 21, 2002

AGENDA

- Project Snapshot
- Recent Events/Accomplishments
- Mission Assessment
- Comments

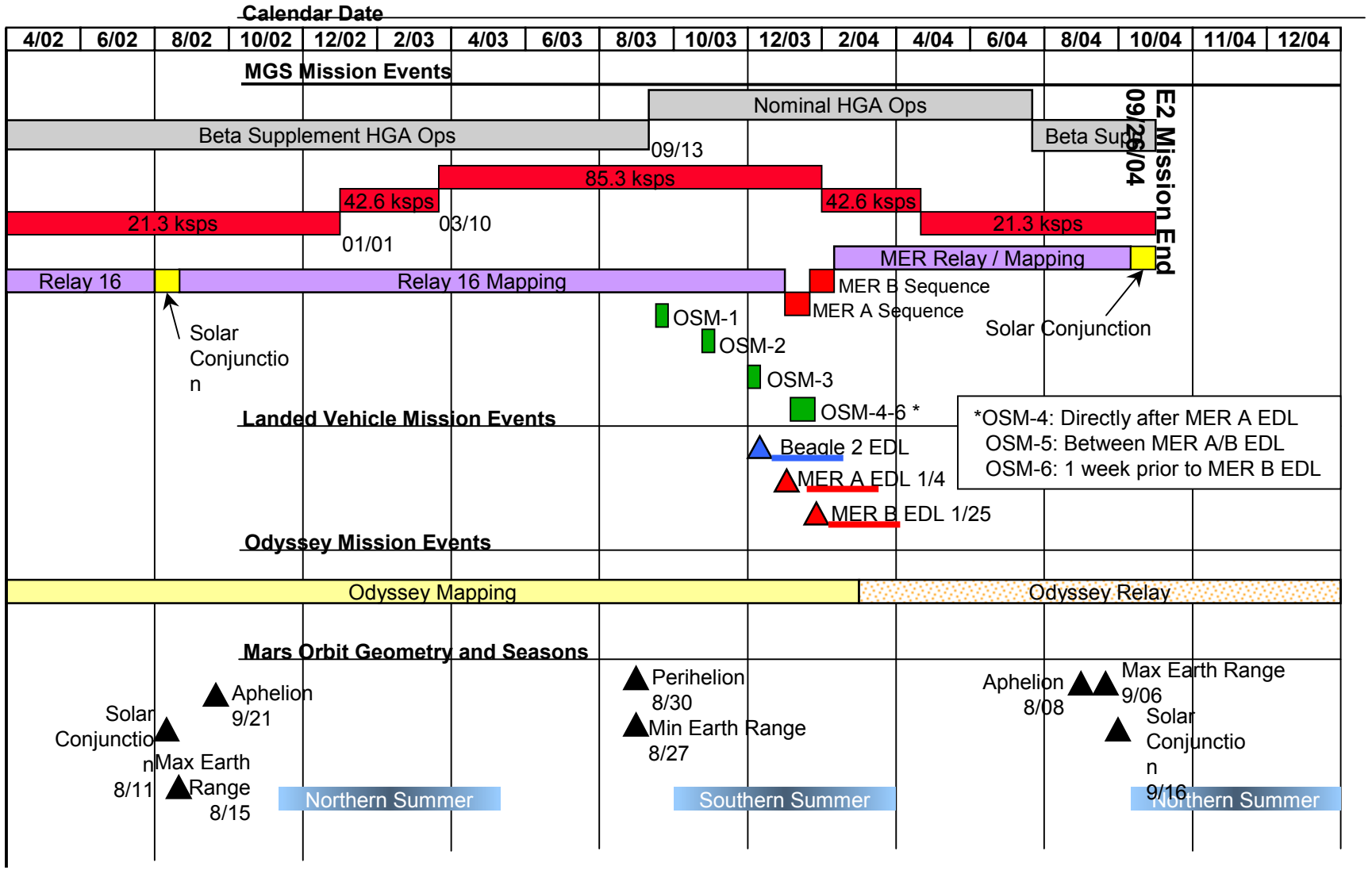
Mars Global Surveyor
Project Snapshot



PHASE NAME	START DATE	END DATE	ORBITS	ORBITE
PRELAUNCH PHASE	**1994-10-12**	**1996-11-06**		
LAUNCH PHASE	**1996-11-06**	**1996-11-07**		
CRUISE PHASE	**1996-11-07**	**1997-09-12**		
INSERTION PHASE	**1997-09-12**	**1999-03-09**	**1**	**1683**
MAPPING PHASE(687DAYS)	**1999-03-09**	**2001-01-31**	**1**	**8505**
EXTENDED MISSION PHASE	**2001-02-01**	**2002-04-22**	**8506**	**13960**
EXTENDED EXTENDED (E2)	**2002-04-22**	**2004-08-19**	**13961**	**29416**

MGS

Mars Global Surveyor
E2 Mission Timeline



MGS

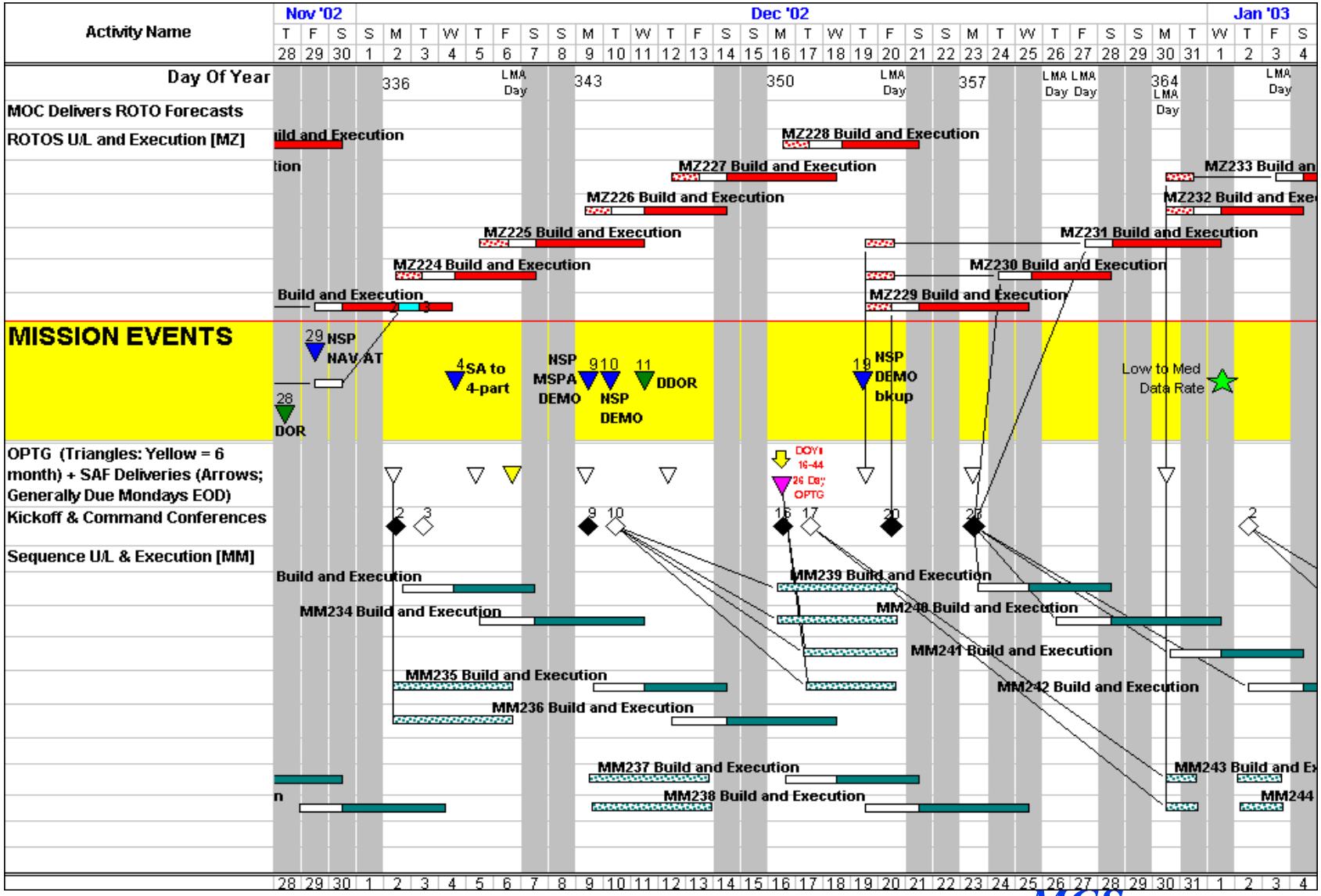
Events

- Last 3 Months:
  - **Solar Conjunction** — **AUG 1-19**
  - **Flex mode recheck** — **AUG 19**
  - **NSP PIT test** — **SEP 23**
  - **MMR** — **SEP 24**
  - **RS Egress Occultations** — **SEP 30, OCT 30**
  - **Mapping orbit #16,000** — **OCT 6**
  - **DDOR** — **OCT 31**

- Next 12 Months:
  - **Medium data rate** — **JAN 1, 2003**
  - **MER Launches** — **MAY 30, JUN 24**

Mars Global Surveyor

Midrange Schedule



MGS

Recent Accomplishments

- Successfully Accomplished 369 ROTOs to Date
- Reduced Fuel Consumption With Nadir Dwell Period 180 Min/Day
  - 15.08 kg of Usable Hydrazine Remaining (20.34 kg Total Fuel Mass)
  - Average Daily Usage: 3.5 g/day
  - 20-day spacecraft downtrack prediction improved to 30 m
  - MOC targeting accuracy improved 0.02 deg. to 0.005 deg.(300m)
- Completed E1 data archive delivery to PDS
- Monthly DDOR Experiments Performed
- Complete PSA failure response procedure/script/testing
- Performed monthly RS Egress occultations (12 egresses/set)
- Flex Modes Test: no evidence of stiffness degradation in solar arrays
- Completed E2 Risk Assessment Plan

MOC Coverage of MER Landing Ellipses

	Elysium	Gusev	Isidis	Meridiani
2-4 meter/pxl	**6.3%**	**46.7%**	**19.0%**	**23.6%**
4-6 meter/pxl	**16.1%**	**42.4%**	**44.5%**	**44.7%**
6-12 meter/pxl	**0.0%**	**4.0%**	**5.3%**	**3.3%**
Sum of Coverage	**22.5%**	**93.0%**	**68.7%**	**71.6%**
Actual Coverage	**20.8%**	**73.0%**	**61.6%**	**61.8%**
Overlap	**7.8%**	**27.4%**	**11.6%**	**15.8%**

As of November 1, 2002

- **Spacecraft is in good health.**
- **Expect to fulfill most extended mission objectives (complete MER site coverage may become E2 mission objective).**
- **Expect to satisfy MER EDL Requirements.**
- **Chances of operation through 2004 are good.**

Comments

- **None**

JURAP: Mars Odyssey Mission Status

November 21, 2002

Prepared by:

Robert A. Mase, Mars Odyssey Mission Manager

Presented by:

Peter T. Poon, TMS Manager

Mars Odyssey, MGS, CNES Mars Premier/ Netlanders, ASI G. Marconi, European VLBI Network, Pioneer, GAVRT

Mars Odyssey
Mission Status

Jet Propulsion Laboratory
California Institute of Technology

Spacecraft operations are (back to) nominal

All three Science payload suites are ON and have resumed data collection

Mission Statistics:

Day 268 of the 917-day science mission (29% complete)

Day 163 since GRS Boom Deploy (24% of one Mars-year)

Total # Mapping Orbits: 4075

Total # of Orbits (since MOI): 4891

586 days past Launch (47% of mission complete)

End of Primary Mission: Aug 24, 2004

Mars Odyssey
Mission Status

Jet Propulsion Laboratory
California Institute of Technology

Odyssey entered safe-mode at approximately 0200 UTC on Monday Nov 4

- Due to sequence abort of manage_dpt sequence block
- Occurred over DSS45 track while in Earth occultation
- Spacecraft exited occultation at 40 bps downlink (MGA)
- All science instruments were powered off or to quiescent state
- RCS Thruster-slew to Earth-point attitude (~55 grams of propellant)

Characteristics of Safe-Mode Configuration

- Inertially fixed attitude, HGA at Earth, Solar Array on the Sun
- Reaction-wheel control, large gravity-gradient torques (6-8 desats/day)
- 8-thruster (RCS and TCM) desats (~ 75 grams/day)
- Reconfigured for HGA Uplink/Downlink and higher bit rates
- Manually manage dpt to get playback of telemetry

Recovery Activities

- Exited Safe-mode, returned to Nadir-point on Fri Nov 8
- Background sequence active and science instruments turned ON Wed Nov 13

Mars Odyssey
Mission Status

Anomaly Findings

- Sequence abort due to VM "Event Overdue"
- Overdue event was *mng_dpt* around the exit Earth occultation, not due for ten more minutes
- Sequence abort prompted safe-mode entry
- Shortcoming in VM flight software for a specific scenario
  - Two tasks of different priority WAITing, accessing global variables
  - Clock synchronization occurs at a specific time, corrupting storage of global variable
  - Event timing is corrupted, appears to be "overdue"
- In this case, the MARIE download and erase block was the low priority task that was WAITing
- Unfortunate timing of clock synchronization exploited flight software behavior

Anomaly Resolution

Short Term:

Do not VM_LOAD the current MARIE auto d/l and erase block

No other sequence block contains WAITs of this nature

Long Term Options: (strategy not yet adopted)

Build a new MARIE block that does not use WAITs

Flight software patch to correct the root cause

Mars Odyssey Mission Status

Jet Propulsion Laboratory
California Institute of Technology

Propellant Usage Thru Day 268 of the Mapping Mission

Total Fuel Available for Mapping: 45.7 kg ±3 kg

	Allocation*	Usage to Date	Plan to Date
Contingency	8.2 kg	0.0 kg	
Safe Mode	5.0 kg	0.2 kg	
Momentum Mgmt	11.5 kg	1.2 kg	2.2 kg
Orbit Trim Mnvrs	3.7 kg	0.0 kg	0.7 kg
Extended Science	1.9 kg	0.0 kg	
PQ Orbit Raise	3.4 kg	0.0 kg	
Unallocated	12.0 kg	0.0 kg	
Total	45.7 kg	1.4 kg	2.9 kg

Total Propellant Remaining: 44.3 kg ±3 kg

* Allocations for 1374-day mission

Mars Odyssey
Mission Status

Jet Propulsion Laboratory
California Institute of Technology

- **Resource Allocation Review Board (RARB - Feb 2003)**
  - Long-range planning of DSN assets
  - Severe DSN loading in Nov'03 - Feb'04 timeframe
    - MER, MEX, Beagle, Deep Impact, Stardust, Nozomi…
  - DSS55 (34m BWG) being built in Madrid - online Nov '03
  - DSS49 Parkes facility for TLM - available Nov '03
  - Mars Program coordinating integrated plan for Mars
    - ODY allocated ~continuous coverage for UHF relay support

  - Future Plans for Odyssey:
    - Hunt for 70m coverage in summer '03
    - Project has provided request for extended mission allocation:

      10 hrs/day on 70m subnet

      Consistent with current prime mission allocation

Mars Odyssey
Mission Status

Jet Propulsion Laboratory
California Institute of Technology

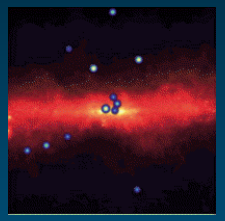
Network Simplification Project (NSP)

- NSP
- Desire to minimize the impact to Odyssey of the NSP transition
- Continuing proactive plan to support engineering tests with the NSP testbed system at DSS-26
- Project Interface Tests (PIT) executed Sept 19, Sept 26, Oct 25, ~~Nov 7~~
  - Tests include uplink, downlink, TRK, TLM, MON, CMD interfaces
- Project DEMO passes being scheduled on DSS-24 upon return to service
  - Dec 9 - MSPA demo with MGS
  - Dec 16 - standalone ODY demo

UHF Relay support services

- Effort ongoing to develop relay services capability
  - Onboard sequence block to manage UHF Contacts
  - Ground software to plan and build Odyssey UHF contact sequences
  - Single ops concept to support MER and Beagle

- Cross-Project UHF Relay coordination group led by MMO - C. Hansen
  - Odyssey participating in relay planning and MER thread testing



INTEGRAL

http://sci.esa.int/home/integral/index.cfm

Joint Users Resource Allocation Planning (JURAP) Committee Meeting

Dwight P. Holmes

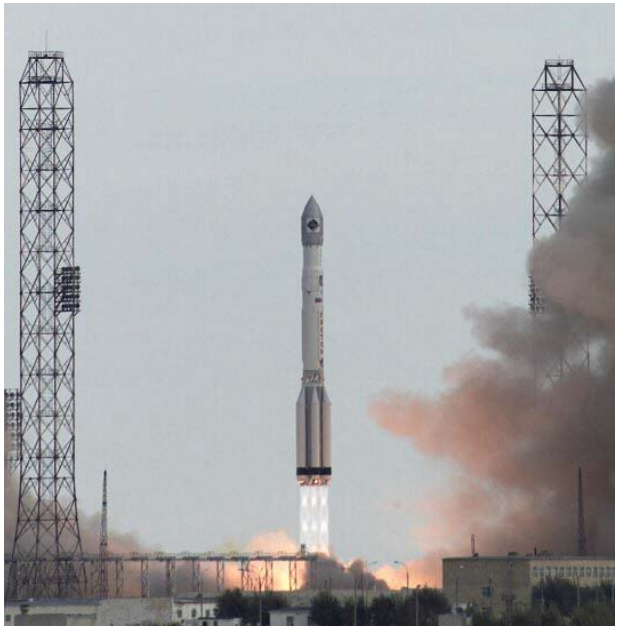
November 21, 2002

NASA / Jet Propulsion Laboratory

Launch and Early Operations

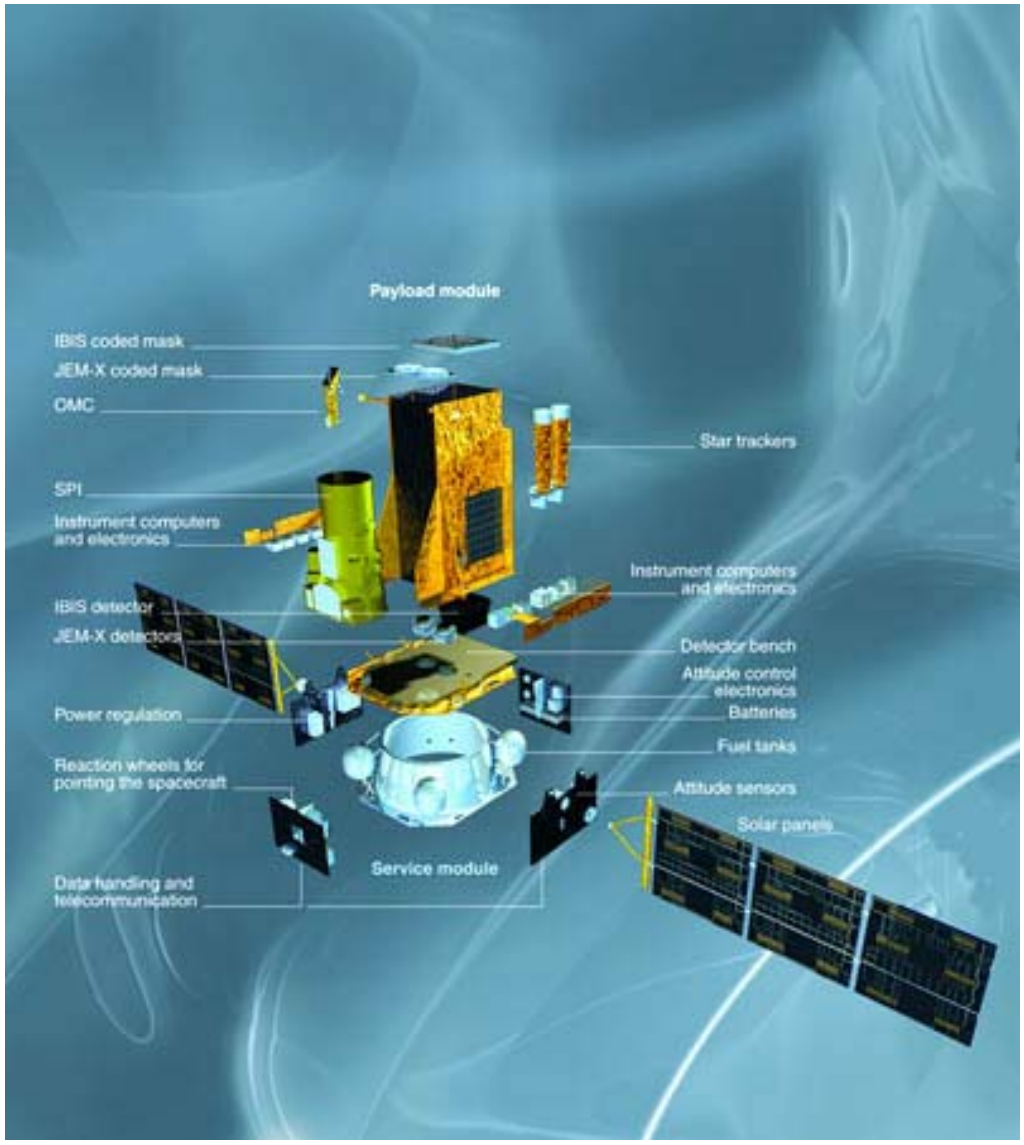
- **Launch**
  - Successful launch occurred from Baikonur, Kazakstahn at 04:41:00 UTC aboard a Proton rocket.
  - Spacecraft injected into a high elliptical parking orbit of 688 x 152918 km (nominal value was 680 x 153000 km)
  - First acquisition achieved by ESA station at Villa-Franca @ 06:00:39 UTC
  - DSN acquisition of signal occurred at 11:17 UTC at DSS-16 (DSS-24 backup telemetry only)

- **LEOP**
  - DSN provided Navigation Support
  - Schedule for 18 Days, completed by 30 October
  - DSN supported 4 Perigee Raise Maneuvers and one Apogee Adjustment Maneuver to the final 72 hr synchronous orbit



INTEGRAL

INTEGRAL



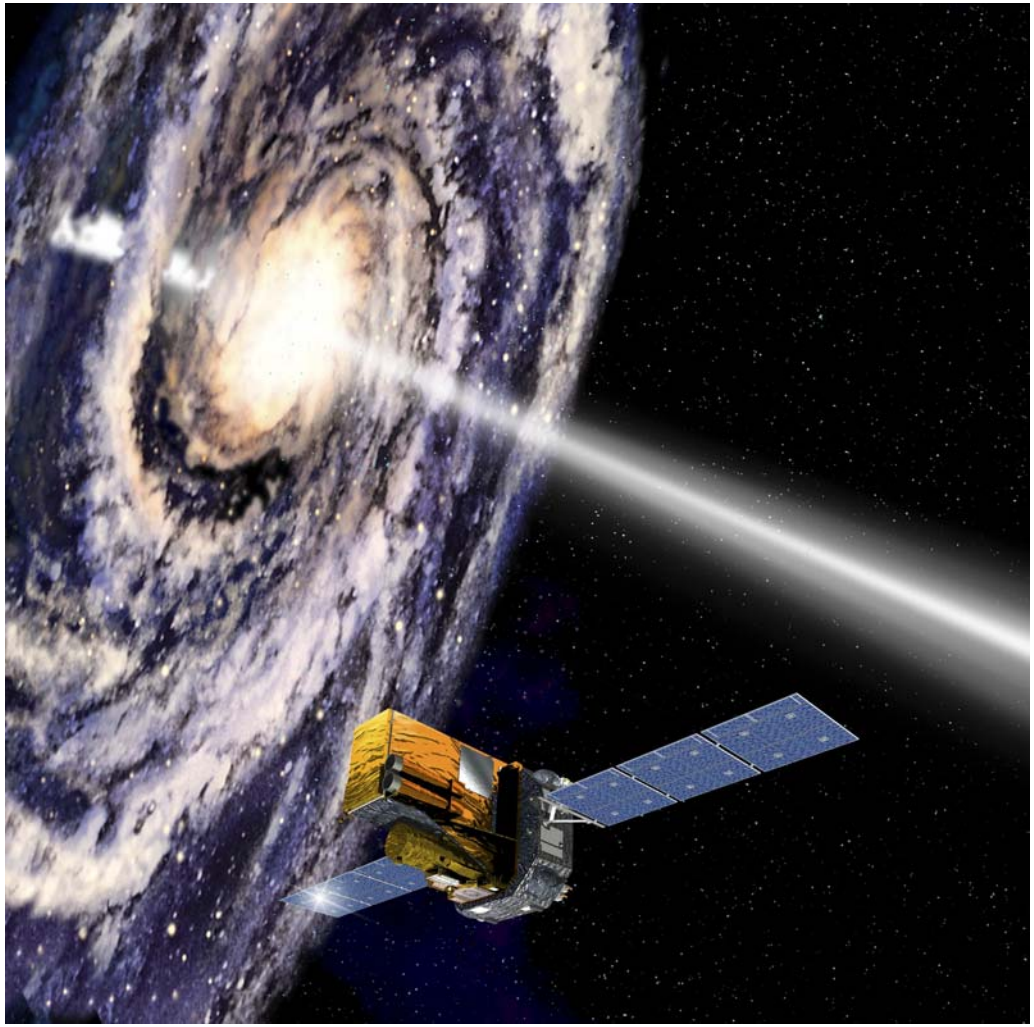
D. Holmes
JURAP 21 Nov 2002

The MISSION

- Spacecraft
  - **Spacecraft is 4,000 kg, with a height of 5 m and diameter of 3.7 m**
  - **Built on an XMM bus**

- Science
  - **Integral is telescope of fine spectroscopy and imaging of gamma-ray emissions in the energy range of 15 KeV to 10 MeV**
    - **Two supporting monitoring Instruments:**
      - **JEM-X X-Ray monitor**
      - **OMC - Optical monitor**
    - **Two Main gamma-ray instruments:**
      - **IBIS Imager (on-board Integral Spacecraft)**
      - **SPI Spectrometer (onboard Integral)**
  - **Full science collection to begin following commissioning phase**
    - **Approximately mid-December 2002**
    - **Primary Science collection through 2004 with a possible extension to December 2007**

INTEGRAL



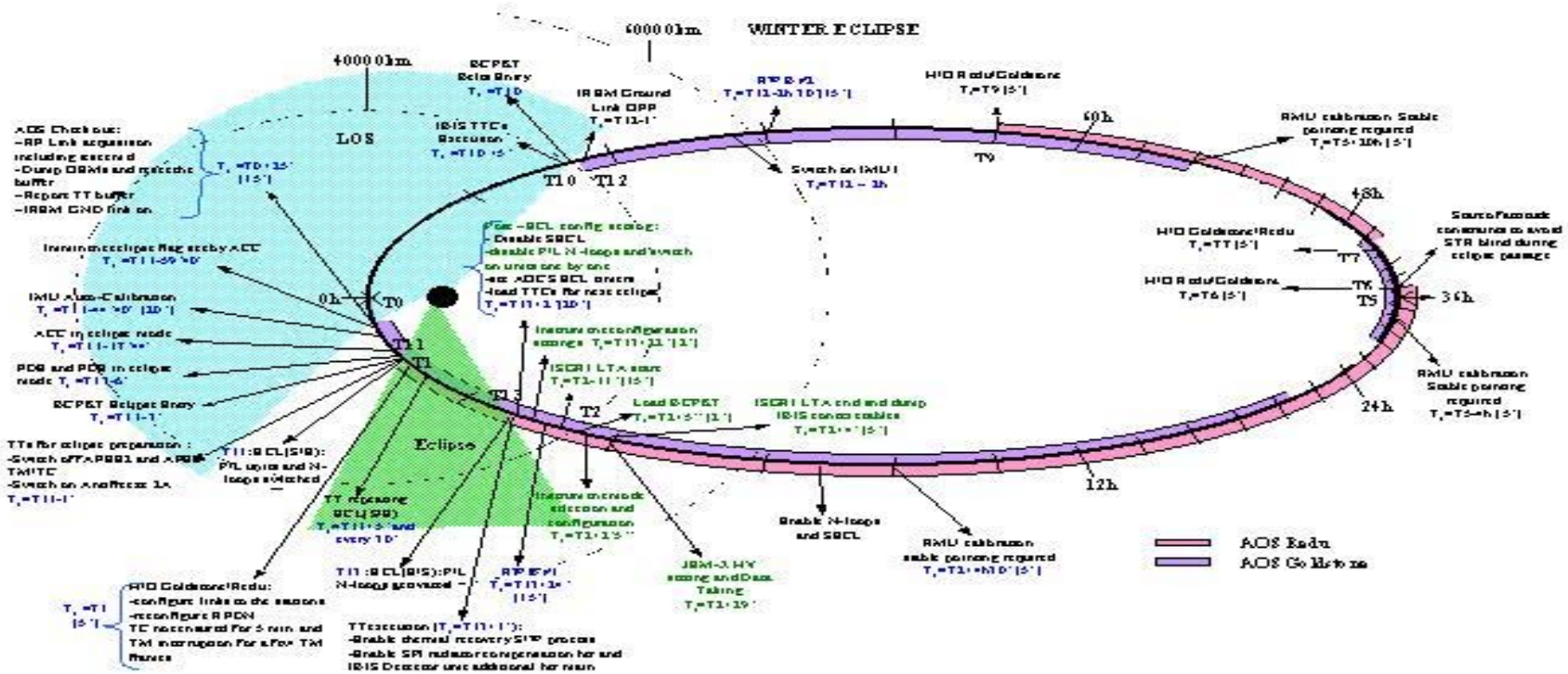
D. Holmes
JURAP 21 Nov 2002

INTEGRAL

OPERATIONS

- **DSN Support**
  - Command via Space Link Extension (SLE) Interface with 26m TCP at Goldstone
  - Provides approximately 16 hrs of S-band support every 72 hours
  - Return services via SLE through AMMOS to European Space Operations Center
  - Communications via dedicate NISN circuit via TCP/IP from JPL to ESOC shared with Cassini Huygens (Total bandwidth 384 Kbps)
- **Interactive Scheduling**
  - ESOC uses the 7 day schedule to develop pass specific service instance configuration files.
  - Interaction via the SPPA for SDS results
  - ESOC uses WEB based tools for the generation and updating of nominal and override Sequence of Events for each scheduled pass – 26m products.

INTEGRAL Reference Orbit



INTEGRAL

Issues

- 26m Hardware and Software
  - **Telemetry Command Processor – Anomalous behavior has caused telemetry outages**
    - **26m upgrade team working diligently to resolve anomalous behavior (Blue Screen of Death aborts)**
  - **Multi-Function receiver**
    - **Receiver performance diminished – out of calibration and alignment – old hardware.**
- Service Management
  - **Ability to generate SICFs from Seven Day Schedule and access SPPA has suffered some growing panes.**
    - **First time any customer has attempted to operate this way**
    - **Driven by customer demand for near autonomous operation**

INTEGRAL

Note from Integral Project

- Thank You
  - **Despite some issues that still plague the DSN performance relative to this project The INTEGRAL Project expresses its deep appreciation for supporting a mission operations scenario that is very new and unique.**
  - **Firsts:**
    1. **First to use interactive SLE command and telemetry**
    2. **First to use SLE return services**
    3. **Near autonomous pass configuration (ESA is using the full capability of the SLE protocol)**

ulysses

JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

http://ulysses.jpl.nasa.gov/

B. Brymer

November 21, 2002

NASA Jet Propulsion Laboratory

ULYSSES

JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

- SPACECRAFT OPERATIONS ARE NOMINAL
- SPACECRAFT POWER AND THERMAL RECONFIGURATIONS AND INSTRUMENT CALIBRATIONS ARE PERFORMED AS REQUIRED
- SPACECRAFT EARTH POINTING MANEUVERS ARE BEING PERFORMED EVERY 6 DAYS

ULYSSES

JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

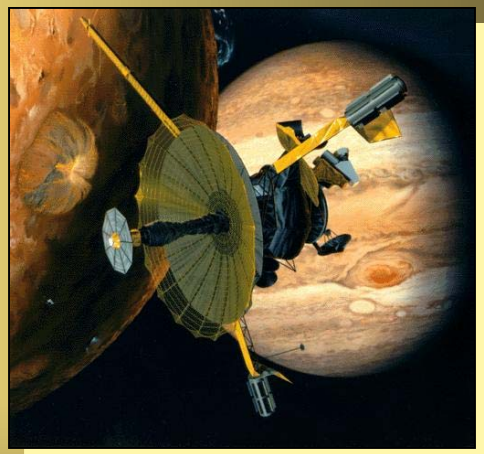
- **SIGNIFICANT FAILURES THIS PERIOD**
  - DOY 294, DSS-25, DR:G101724; Power glitch caused brakes to set, having to be released by technician. **51** Minutes of realtime telemetry lost.
  - DOY 297, SPC-10, DR:G101735; Timing problems at complex. Lost **5:57** of realtime telemetry and the **second attempt at a HUS Datation test**.
  - DOY 303, DSS-54, DR:M101111; PLC failed. **2:32** of realtime telemetry lost.
  - DOY 304, DSS-14, DR:G101777; Station unable to load predicts. 2:15 of realtime telemetry (in 4096 playback) was lost. The playback that was lost was 13 hours, for a total outage of **15:15**.
  - DOY 320, DSS-54, DR:M101150; Initially a weather related outage, once abated, the station could not re-acquire without rebooting RCC and swapping LANs. 25 Minutes of realtime telemetry (in 2048 playback) was lost. The playback that was lost during this period was 50 minutes, for a total outage of **1:15**.

Galileo
Journey to Jupiter

JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

Brad Compton

November 21, 2002



NASA / Jet Propulsion Laboratory

http://galileo.jpl.nasa.gov/

GALILEO MILLENIUM MISSION

ROUTINE ACTIVITIES

- Propulsion maintenance.
- Gyro Scale Factor test.
- Science instrument MROs.

GALILEO MILLENIUM MISSION

SIGNIFICANT EVENTS

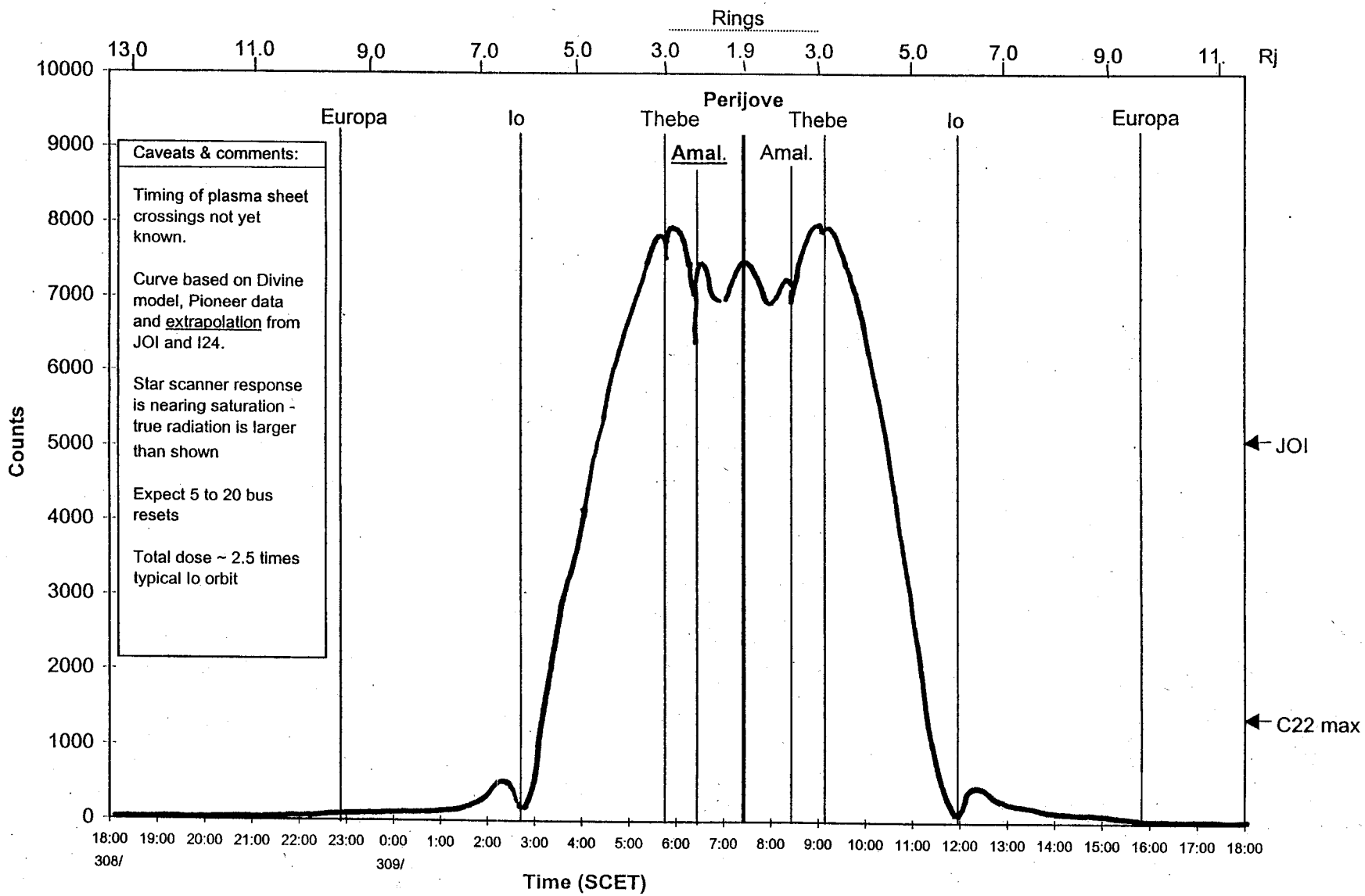
- Cancelled Orbit Trim Maneuver 109 (not needed).
- Completed a nearly continuous, thirteen-year Extreme Ultraviolet sky survey.
- Amalthea closest approach occurred on November 4 at an altitude of 160 km, perijove was about an hour later at 2 Rj. For comparison JOI was 4 Rj.
- There were at least seven standard despun bus resets (all handled by the onboard patch) and five separate calls to safing. The first safing event, at about 16 minutes after closest approach, halted the tape recorder and cancelled the sequence.
- With the exception of the tape recorder the spacecraft has been completely recovered. Testing suggests radiation damage to the optical electronics in the recorder's motor driver, which may be recoverable.
- Two tracks of high priority unique science were successfully recorded prior to safing. The first continuous fields and particles survey of the inner magnetosphere from Io's orbit to inside Amalthea's orbit and a sample of the outer reaches of the gossamer rings.

GALILEO MILLENIUM MISSION

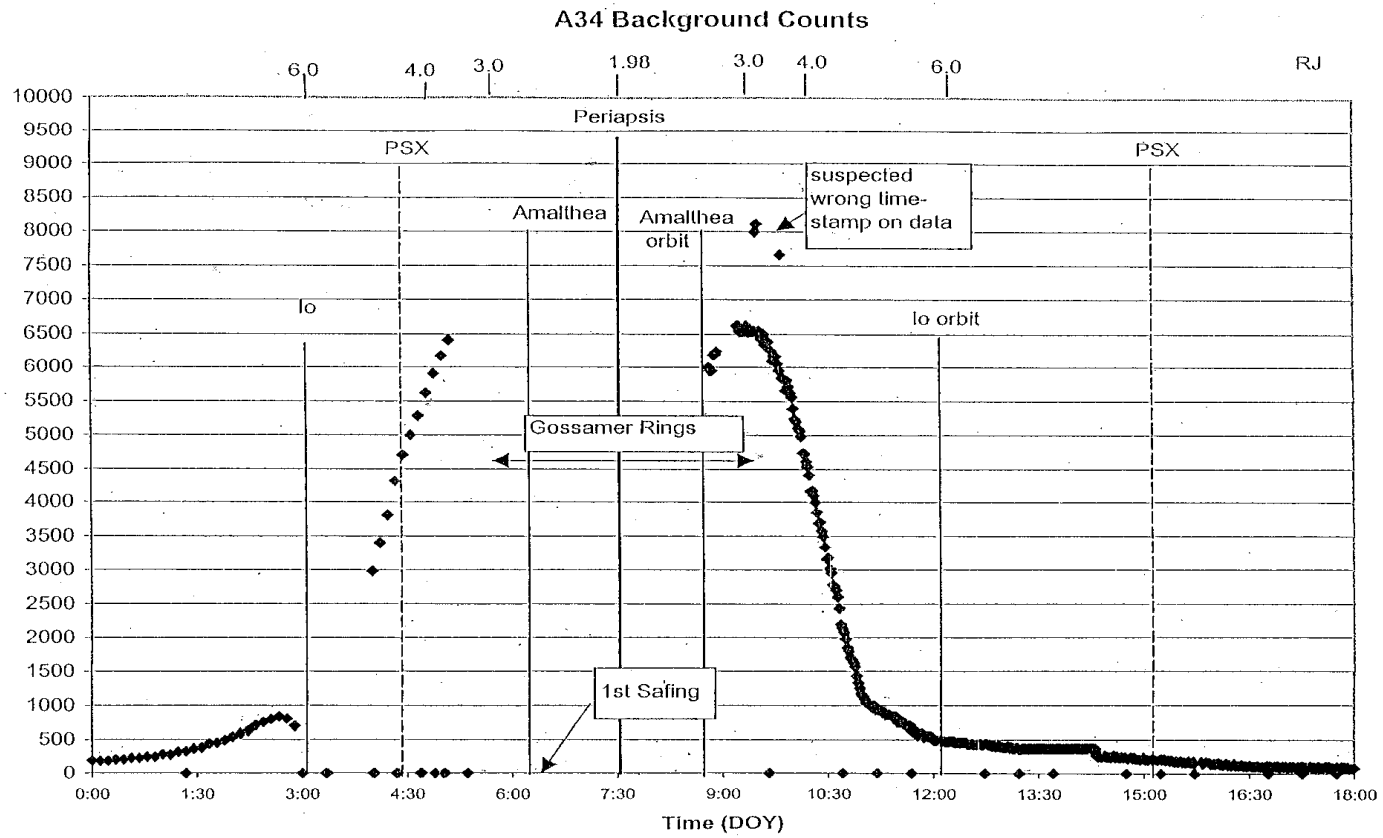
PROJECT PLANS

- Continue tape recorder characterization and recovery.
- Initiate A34 playback.
- Galileo impacts Jupiter September 21, 2003.

A34A Predicted Background Radiation

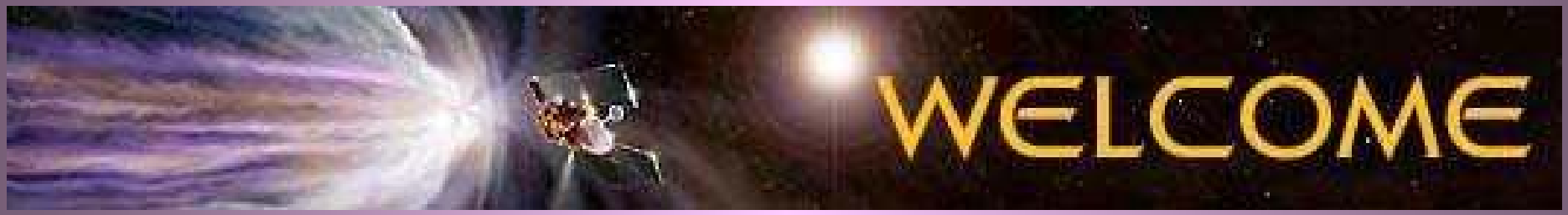


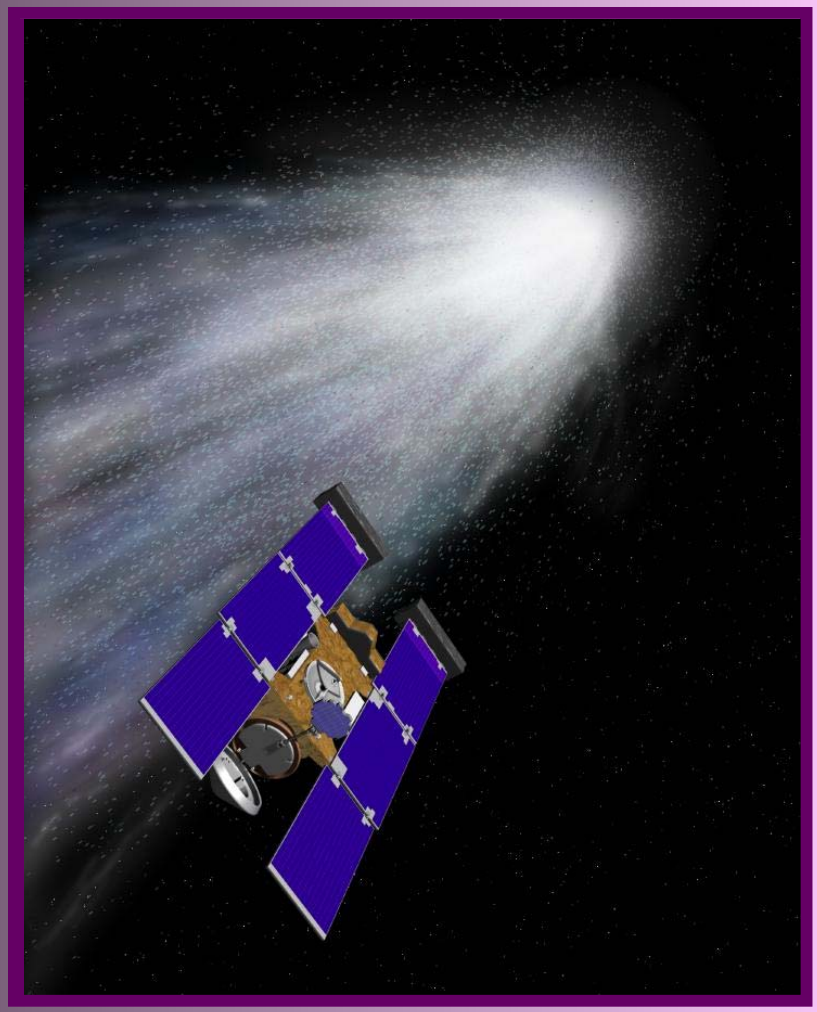
Fieseler 2/4/2002



Fieseler

11/10/2002





STARDUST

JOINT USERS
RESOURCE ALLOCATION
PLANNING COMMITTEE

R. E. Ryan

November 21, 2002

NASA Jet Propulsion Laboratory

http://stardust.jpl.nasa.gov

STATUS

SPACECRAFT IS HEALTHY (11/21/02)

PRESENTLY 2.43 AU from EARTH

00:40:25 RTLT

2.27 AU from SUN

- **BIT RATE IS AT 504 bps (on HGA/34 HEF)**
- **EARTH RANGE IS INCREASING**
  - **S/C STARTING BACK TOWARD THE SUN, BUT EARTH IS MOVING AWAY**
  - **THE POWER RESTRICTIONS ARE EASING**

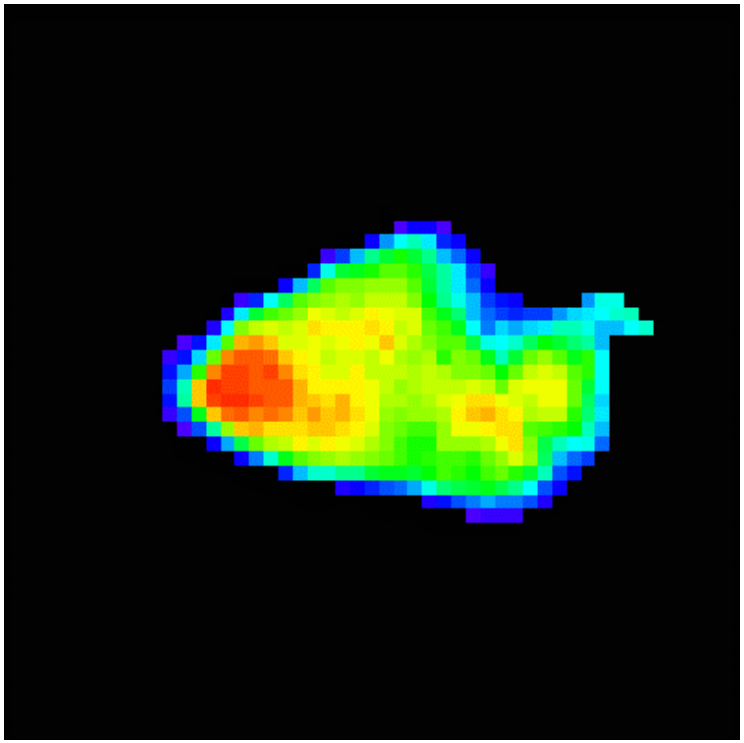
- **INTERSTELLAR PARTICLE COLLECTION PERIOD 2**
  - **AEROGEL GRID REMAINS DEPLOYED**

CURRENT ACTIVITIES

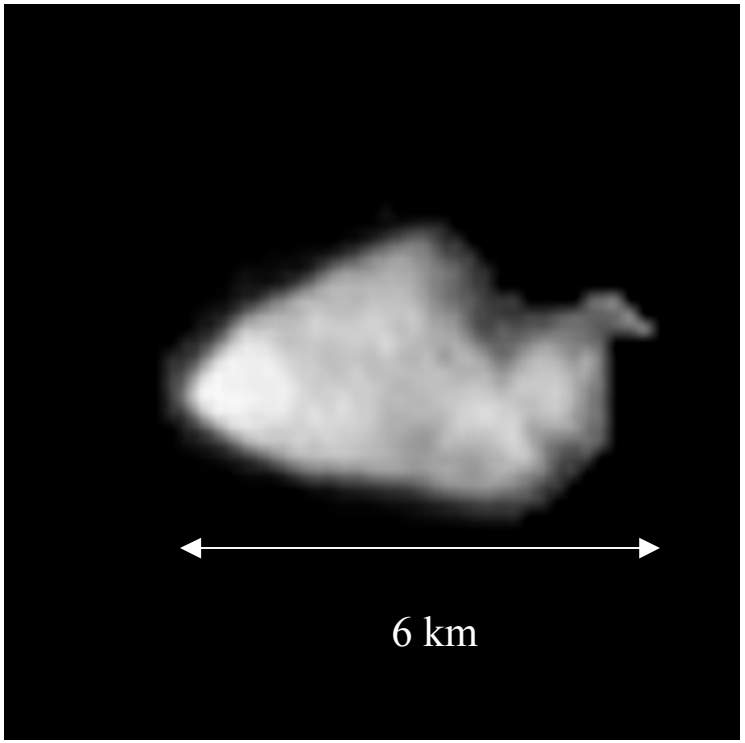
- SUCCESSFULLY COMPLETED WILD 2 APPROACH AND ENCOUNTER TESTING AT ANNEFRANK
  - CLEAN CAMERA PERFORMED EXCELLENTLY - HOWEVER ANNEFRANK TOO DIM TO SEE ON APPROACH (<11TH VISUAL MAGNITUDE)
  - S/C & NUCLEUS TRACKING WORKED PERFECTLY DURING FLYBY
    - TOOK 72 IMAGES
  - APPROACH NAV TOO ACCURATE - ROLL TURN COMPUTED BUT TOO SMALL TO BE IMPLEMENTED
  - LESSONS LEARNED BEING COMPILED

- IPN SUPPORT HAS BEEN GOOD THIS PAST PERIOD
  - DSMS NSP PIT COMMAND TRACK COMPLETED ON 11/20
    - UNABLE TO SUPPORT ANOTHER RADIO METRIC PIT UNTIL DECEMBER

STARDUST Image of the Main Belt Asteroid Annefrank



Color added to enhance brightness variations



Visually enhanced and resampled to highlight surface detail

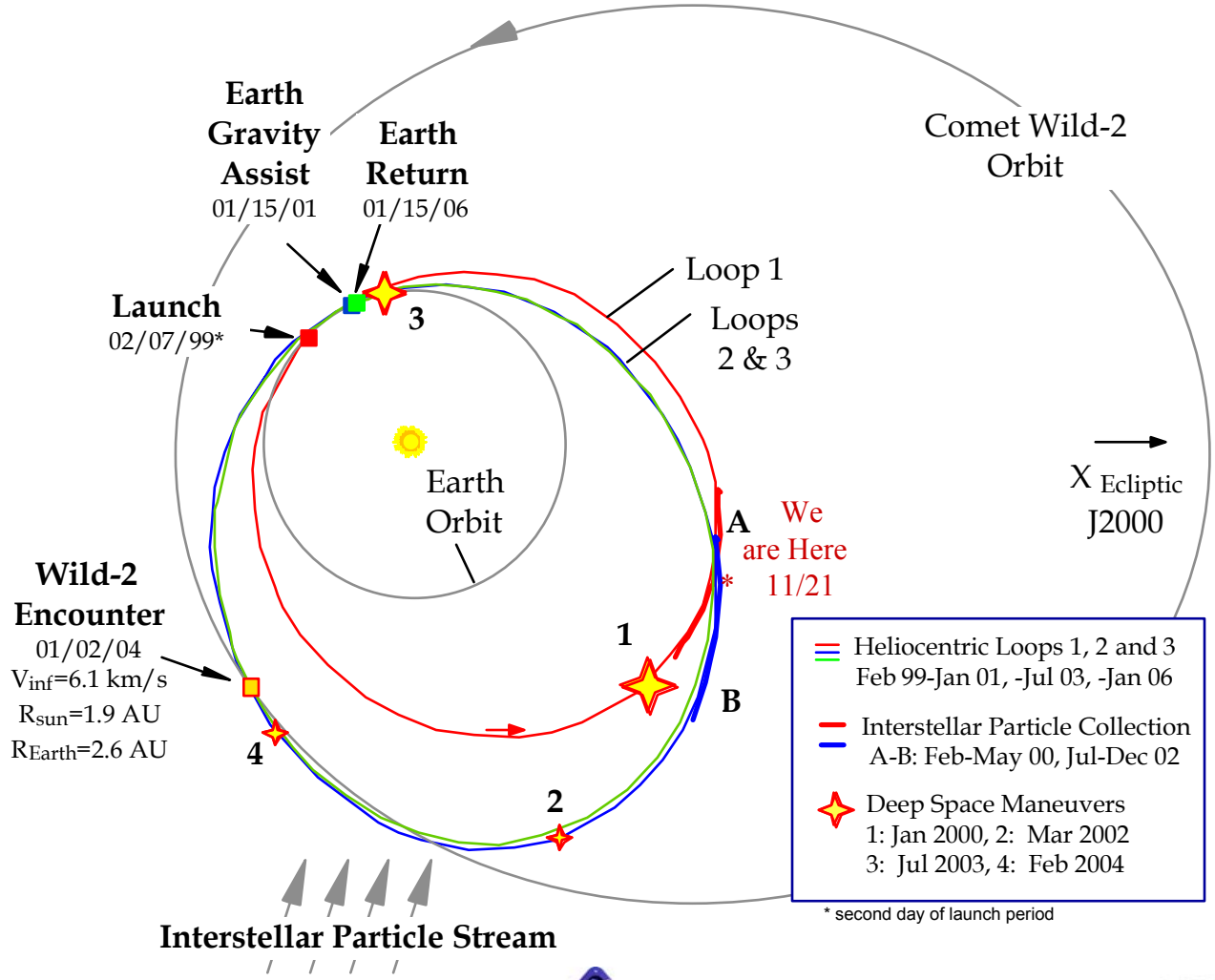
http://stardust.jpl.nasa.gov

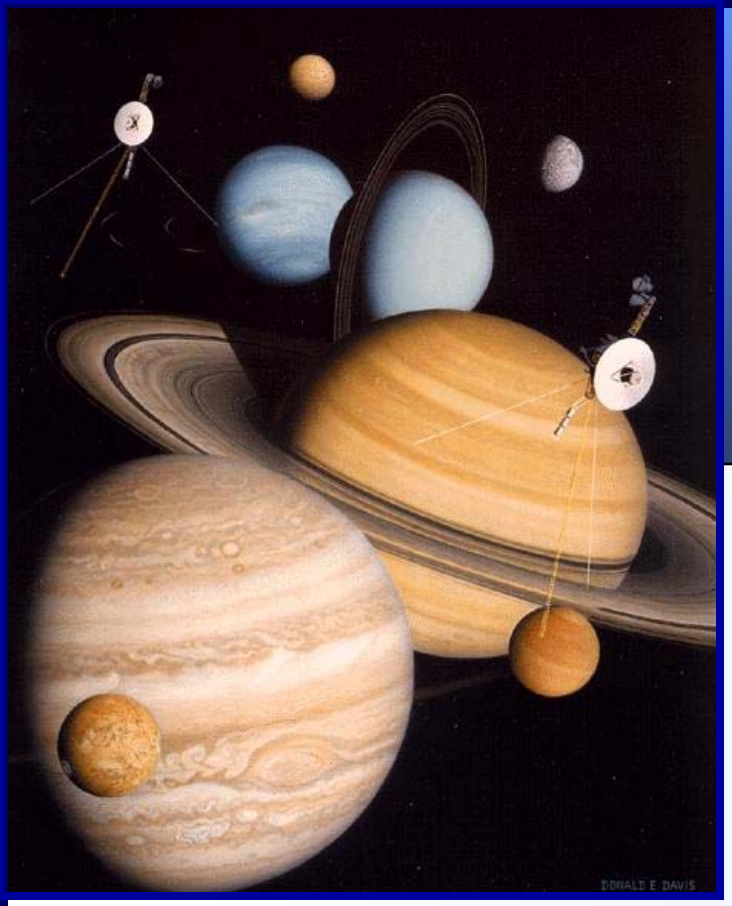
UPCOMING EVENTS

INTERSTELLAR DUST COLLECTION 2
ENDS ON DECEMBER 9, 2002
CLOSE THE SRC

DSMS NSP DEMOS DECEMBER 11 AND 17

POSSIBLE TCM 7B - JANUARY 16, 2003
CORRECTION LOOKS VERY SMALL

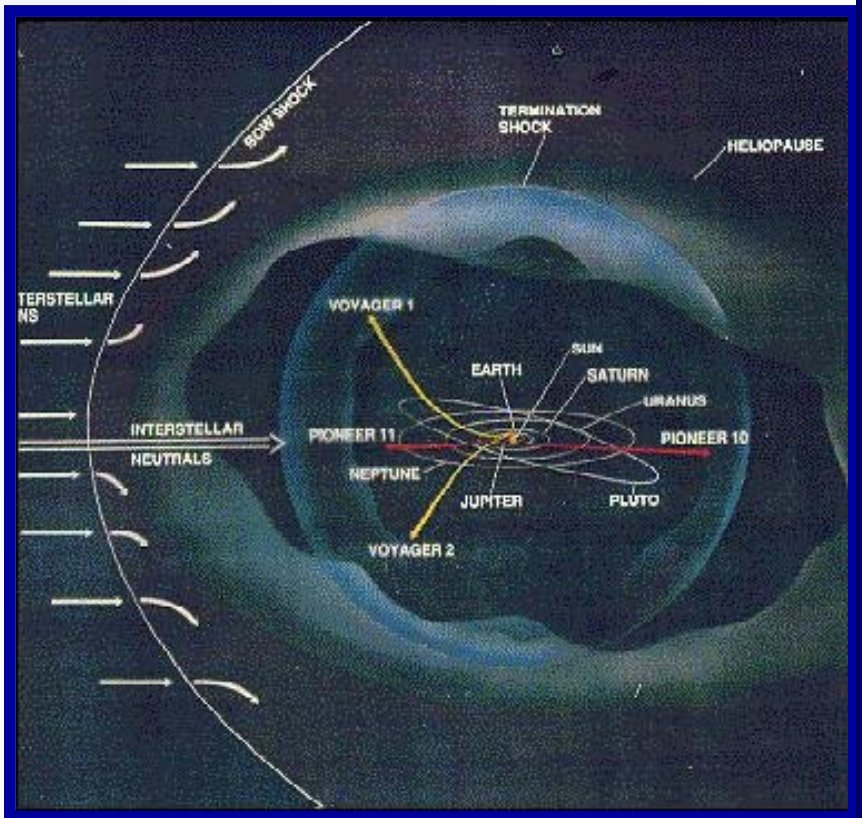

Earth Gravity Assist
01/15/01
Earth Return
01/15/06
Launch
02/07/99*
Comet Wild-2 Orbit
Loop 1
Loops 2 & 3
3
Earth Orbit
X Ecliptic J2000
A
We are Here 11/21
*
Wild-2 Encounter
01/02/04
Vinf=6.1 km/s
Rsun=1.9 AU
REarth=2.6 AU
1
B
4
2
Heliocentric Loops 1, 2 and 3
Feb 99-Jan 01, -Jul 03, -Jan 06
Interstellar Particle Collection
A-B: Feb-May 00, Jul-Dec 02
Deep Space Maneuvers
1: Jan 2000, 2: Mar 2002
3: Jul 2003, 4: Feb 2004
* second day of launch period
Interstellar Particle Stream



VOYAGER

FLIGHT OPERATIONS

JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE



Jefferson Hall
November 21, 2002
NASA Jet Propulsion Laboratory

http://voyager.jpl.nasa.gov

VOYAGER

FLIGHT OPERATIONS

JPL

JPL NASA Jupiter Saturn Uranus Neptune and Beyond... VOYAGER I & II

FLIGHT SYSTEM STATUS

MISSION STATUS

VOYAGER 1

* HELIOCENTRIC DISTANCE – 86.5 AU, RTLT – 24h13m04s
* SPACECRAFT REMAINS HEALTHY
* MAJOR ACTIVITY: DTR PLAYBACK, PMPCAL, ASCAL, & MAGROL

VOYAGER 2

* HELIOCENTRIC DISTANCE – 68.8 AU, RTLT – 19h12m28s
* SPACECRAFT REMAINS HEALTHY
* MAJOR ACTIVITY: PMPCAL,MAGROL

VOYAGER

FLIGHT OPERATIONS

JPL

GROUND SYSTEM STATUS

(October 12, 2002 - November 15, 2002)

- DSN - OVERALL SUPPORT – GOOD

- Voyager 1: On DOY 302, DSS-25 supported 3.7 hours on place of DSS-14 which was released to maintenance. Others problems included rain and wind at DSS-15 [DR G101715], data timing problems at DSS-14 [DR N100651], and rain at DSS-65 [DR M101142].

- Voyager 2: On DOY 288, DSS-43 supported 2.2 hours in place of DSS-34 which was released to MAP. Other problems included TSP problems at DSS-43 [DR C101762], low power transmitter repair at DSS-43 [DR C101781], and rain at DSS-45 [DR C101791].

VOYAGER

FLIGHT OPERATIONS

TOTAL SUPPORT TIME, OUTAGE TIME, % OF OUTAGE TIME

S/C	SCHED. SUPPORT	ACTUAL SUPPORT	70M TIME	SIGNIFICANT OUTAGE TIME	% OF OUTAGE TIME
31	450.7	450.7	137.5	4.6 (1.9)	1.4
32	318.2	318.2	134.1	2.2(0.9)	1.0

VOYAGER HOMEPAGE - http://voyager.jpl.nasa.gov